Executive Summaries for FY21-22
Infrastructure Program Projects - 2 of 2

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MERCED AVENUE GREENWAY

A MULTI-BENEFIT GREEN INFRASTRUCTURE PROJECT

SOUTH EL MONTE
ALL AMERICAN CITY
INCORPORATED 1958
CITY OF ACHIEVEMENT

COUNCIL FOR WATERSHED HEALTH

TETRA TECH

alta PLANNING + DESIGN

ACTIVE SGV

Climate Resolve

PROJECT OVERVIEW
MERCED AVE GREENWAY

LOCATION: South El Monte, CA

PROJECT EXTENT: 0.65-mile street right-of-way

DESCRIPTION: Multi-benefit stormwater capture green street that reduces the number of lanes from four to two and promotes the use of active transit.

KEY COMPONENTS

- 6,830 ft² of bioretention BMPs
- 10,420 ft² of permeable pavement
- 1,907 ft² of Focal Point biofiltration areas with high-infiltration media
- 25.91 ft³ of infiltration chambers
- 11,078 ft² of planting areas
- 132 native or California-friendly trees
- 1.3 miles of 5-ft wide raised bike lanes

SCWP SCORING DETAILS

- **Water Quality: 31** out of **50** (benefited from long-term performance of treatment train)
- **Water Supply: 0** out of **25** (difficultly reaching minimum capture threshold as a distributed NBS project)
- **Community Investment: 10** out of **10** (diverse amount of community benefit around connection, habitat, and UHI)
- **Nature-based Solution: 10** out of **15** (incorporates several NB solutions, but impervious reduction didn't meet threshold because it is a street)
- **Leveraged Funds: 10** out of **10** (diverse funding resources and comprehensive engagement strategies)

TOTAL SCORE: 61/100

STORMWATER BENEFITS

Drainage Management Area: 45.71 acres
85th Percentile Capture Provided By Project: 68,599 ft³
Portion of DMA Managed For The Full 85th Percentile: 100%
Total Average Annual Volume Captured And Treated: 21.5 AFY
Total Average Annual Volume Infiltrated: 10.26 AFY

COMMUNITY BENEFITS

New landscaped areas: 57,345 ft²
Canopy cover increase: 71,750 ft²
Carbon sequestration: 532,740 lbs
GHG O_3 removed: 3,831 lbs
GHG NO_2 removed: 833 lbs
GHG SO_2 removed: 22.7 lbs
$PM_{2.5}$ removed: 43.3 lbs
Electricity saved: 278,570 kWh
Temperature reduction: 1-2 °C

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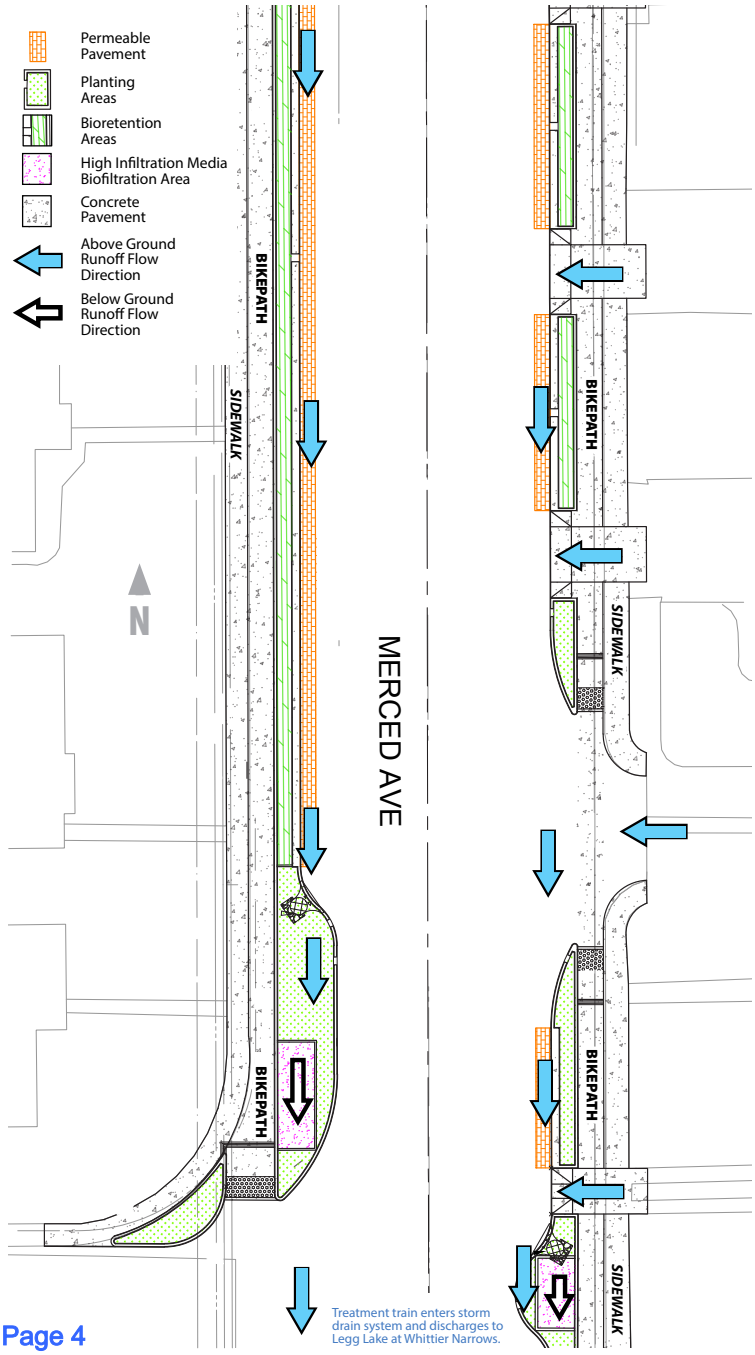
MERCED AVE GREENWAY

Process Flow Schematic
Safe Clean Water Program

Existing Conditions: The drainage management areas (45.71 acres) along the 0.65-mile Project site generate 68,600 ft^3 of runoff in an 85th percentile, 24-hr storm event. Land use varies throughout the project area where impervious surfaces make up 89% of the north commercial/industrial end and 41% of the south residential end. Water runs off properties into a traditional curb/gutter system along Merced Avenue and flows in a southern direction into conventional catch basins that are connected to the City's storm drain system, discharging into Legg Lake at Whittier Narrows Recreation Area.

Project Improvements: Sample section of the Greenway delineates treatment train and flow of street runoff. See 100% design plans for sizing specifications and construction details.

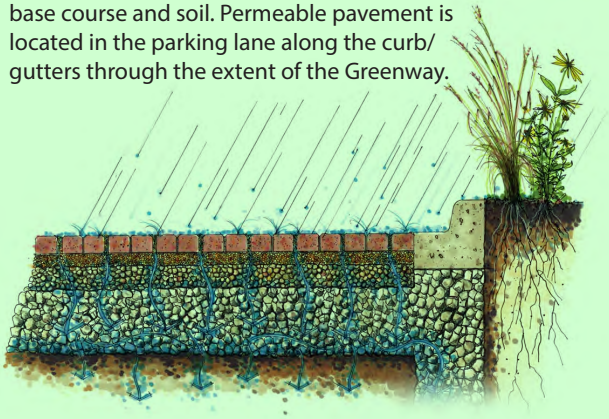


Treatment Train Storm Water BMPs:
4,187 ft^2 - Bioretention Areas (conventional)
2,643 ft^2 - Bioretention Areas (with underdrain)
1,907 ft^2 - High Infiltration Media Biofiltration Areas
10,420 ft^2 - Permeable Pavers (with infiltration chambers)
11,078 ft^2 - Planting Areas (sump 6" stormwater)
132 new street trees

TOTAL DESIGN VOLUME CAPTURED: 21.5 AFY

1

Permeable pavement is the first line of treatment, intercepting sheet flow from adjacent properties and infiltrating runoff into the underlying reservoir base course and soil. Permeable pavement is located in the parking lane along the curb/gutters through the extent of the Greenway.



USDA-NRCS (Natural Resources Conservation Service); illustration by Doug Adamson.

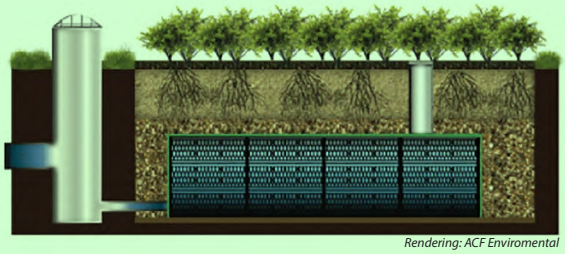
2

Once the permeable pavement is saturated, excessive water flow will be diverted into a second line of treatment through the gutter and into **planting areas** (6" sump) and larger **bioretention areas** from a series of curb cuts. Depth to groundwater goes from 45 ft on the north end of the street down to 6 ft on the south end; therefore, there are a combination of both offline and online bioretention areas depending on the location.

Rendering: Alta Design + Planning, Inc.

3

High infiltration media biofiltration areas are placed on eight select street corner bulbs-outs to capture and treat larger flows before the water enters the storm drain system and discharges to Legg Lake at Whittier Narrows. The FocalPoint System media is highly porous and allows for infiltration rates at 100 in/hr.



Rendering: ACF Enviromental

COMMUNITY ENGAGEMENT
MERCED AVE GREENWAY

Examples of engagement activities implemented during the design phase.

- Tabling at a community Easter Breakfast - March 30, 2018
- Tabling at a SEM Family Health Fair - April 14, 2018
- Tabling at a community Cinco de Mayo Event - May 5, 2018
- Bike Tour - June 2, 2018
- Tabling at a SEM Open House - June 9, 2018
- Community Canvassing - early June 2018
- Community Workshop #1 - June 14, 2018
- Community Walking Tour - September 22, 2018
- Volunteer Bike/Pedestrian Count - October 4, 2018
- Street Pop-up Workshop and Demo #2 - October 13, 2018
- SEM High School Focus Group - October 23, 2018
- Youth Focus Group - November 5, 2018
- Door-to-Door Surveys - February 2019
- City Council Presentation - February 12, 2019
- City Council Presentation - March 26, 2019
- Community Workshop #3 - April 13, 2019
- City Council Presentation - January 28, 2020
- Community Mailer - Project Design Update - May 2020

Metro Orange Line Water Infiltration and Quality Project – Project Summary

Project Overview

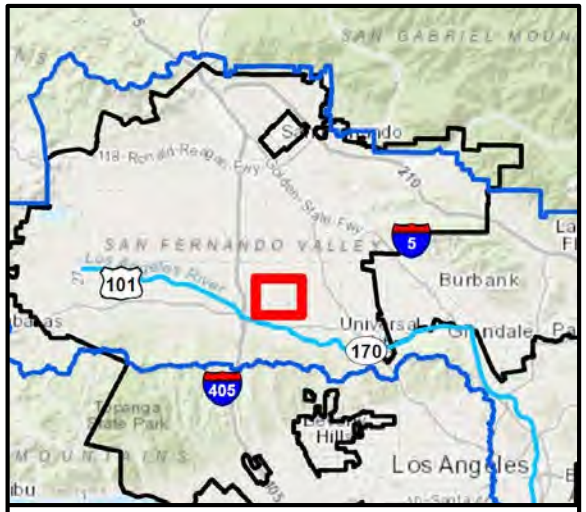
The project proposes to implement 168 drywells with pretreatment facilities along the Metro Orange Line (MOL) right-of-way in San Fernando Valley to capture, treat, and infiltrate stormwater runoff from 2,319 acres drainage area. It takes advantage of highly fortuitous siting as it intersects primary drainages in the region. Utilizing existing LACFCD infrastructure, the project intercepts, treats and infiltrates stormwater prior to discharge to the LA River. Furthermore, the infiltration occurs in the highest-value groundwater recharge areas within the City of Los Angeles. Use of existing LA Metro property avoids potential complications associated with land acquisition, and project siting can be conducted adding a largely subsurface beneficial use, without disrupting primary transportation functions. The Project catchment areas do not overlap with those from other existing or proposed infiltration projects.

The Project will be integrated into the MOL Bus Rail Transit (BRT) Improvements Project, which is a capital improvement project that will provide community benefits such as creating fast and reliable ridership, and enhancing pedestrian safety in disadvantaged communities and neighborhoods with significant unmet needs. Integrating the project with MOL BRT Improvement Project will also save construction cost and expedite project implementation process.

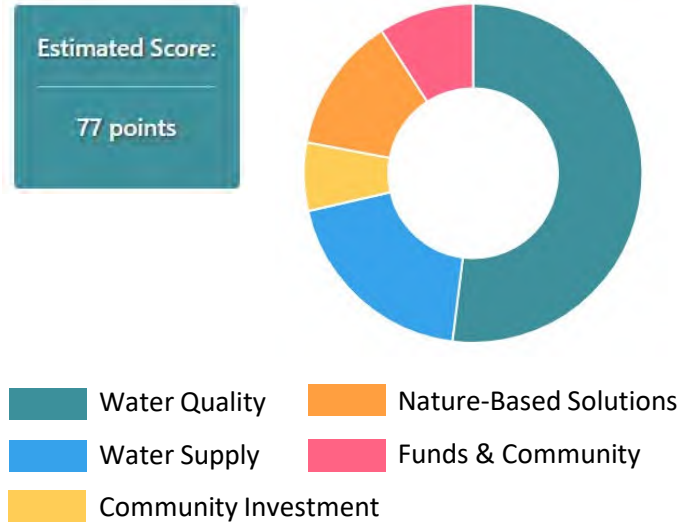
Project Highlights

- The Project can provide an annual groundwater recharge yield between **780 and 1,050 acre-feet/year** into the San Fernando Groundwater Basin.
- The Project will remove 65% of the zinc and bacteria pollutant load on an annual average basis
- The Project will make **LA Metro net water positive**, allowing Metro to contribute more to regional groundwater infiltration than it uses to support all of its operations.
- The estimated capital cost of the project is $32 million (planning, design, construction). The estimated annual operation and maintenance cost is approximately $0.8 million per year. Los Angeles Department of Water and Power (LADWP) has agreed to fund 39% of the Project capital cost.
- LA Metro has engaged several key stakeholders in the development of the Project. This included targeted discussions with agencies such as LADWP, LA Sanitation, and StreetsLA and community organizations, such as Climate Resolve, Council for Watershed Health, and the NRDC. To date the Project has received three letters of support from the stakeholders.

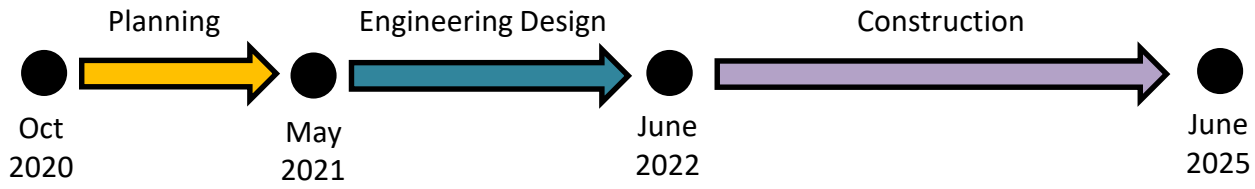
Project Location



SCW Score Summary



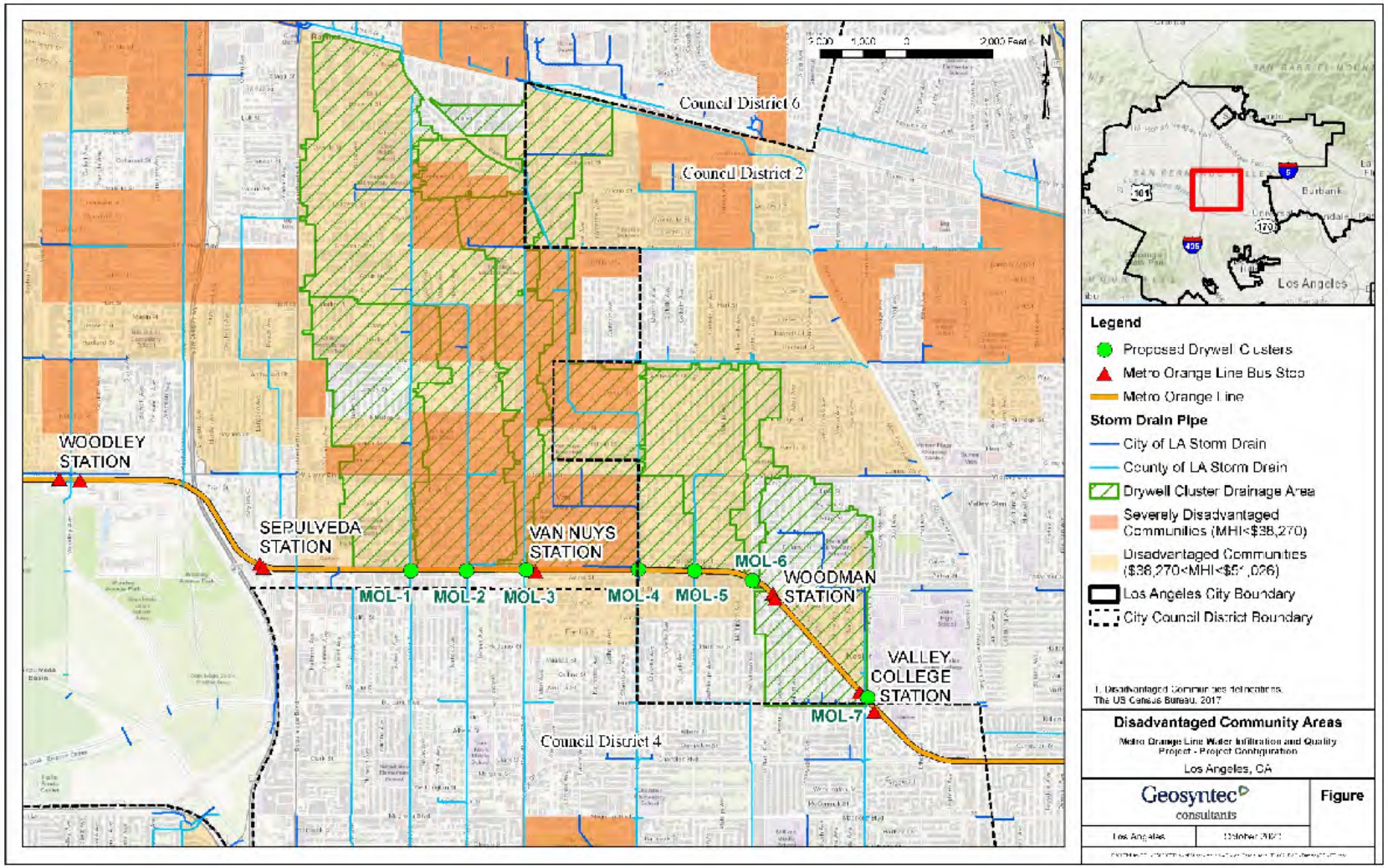
Project Schedule



Metro Orange Line Water Infiltration and Quality Project – SCW Score Details

Scoring Section	Project Score	Max Possible Points	Project Score Description
Water Quality Wet + Dry Weather Part 1	20	20	Cost Effectiveness >1.0 acre-feet capacity / $ million
Water Quality Wet + Dry Weather Part 2	20	30	Long-Term Pollutant Load Reduction Primary Class of Pollutants: >50% Second Class of Pollutants: >50%
Water Supply Part 1	3	13	Cost Effectiveness $2,000–2,500/ac-ft
Water Supply Part 2	12	12	Annual Average Wet Weather Capture for Water Supply >300 ac-ft/year
Community Investment	5	10	Three distinct Community Investment Benefits
Nature-Based Solutions	10	15	Implements natural processes or mimics natural processes to slow, detain, capture, and absorb/infiltrate water in a manner that protects, enhances and/or restores habitat, green space and/or usable open space Utilizes natural materials such as soils and vegetation with a preference for native vegetation
Leveraging Funds Part 1	3	6	>25% Funding Matched
Leveraging Funds Part 2	4	4	The Project demonstrates strong local, community-based support and/or has been developed as part of a partnership with local NGOs/CBOs.
Totals	**77**	**110**	

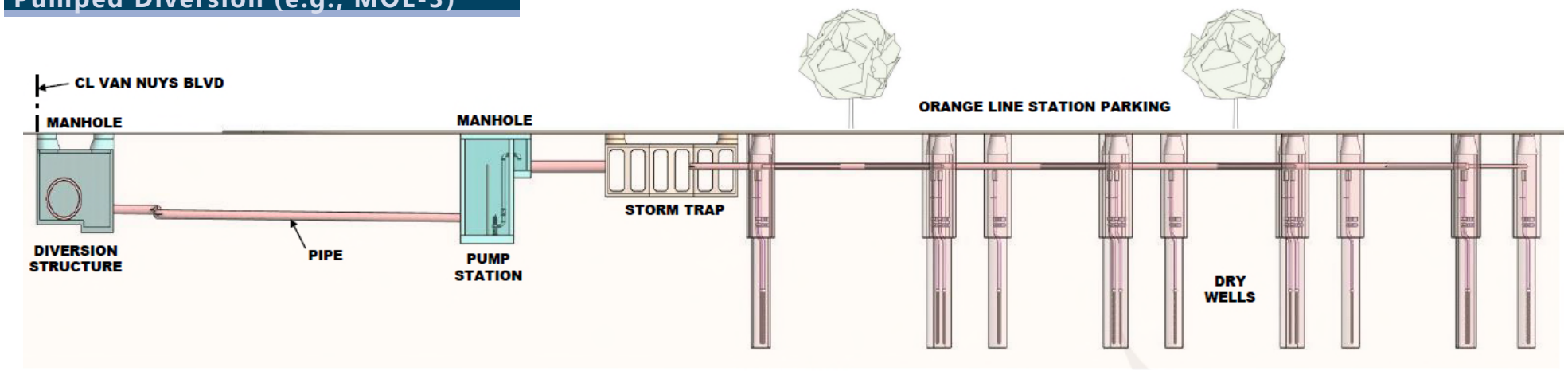
Metro Orange Line Water Infiltration and Quality Project – Drainage Area Overview



Drywell Cluster ID	Drainage Area (ac)	Number of Drywells Proposed	Annual Groundwater Recharge Range (acre-feet)
MOL-1	308	24	100 - 140
MOL-2	683	40	210 - 290
MOL-3	197	14	80 - 110
MOL-4	579	39	200 - 280
MOL-5	193	13	50 - 70
MOL-6	67	10	40 - 40
MOL-7	292	28	100 - 120
Total	**2,319**	**168**	**780 – 1,050**

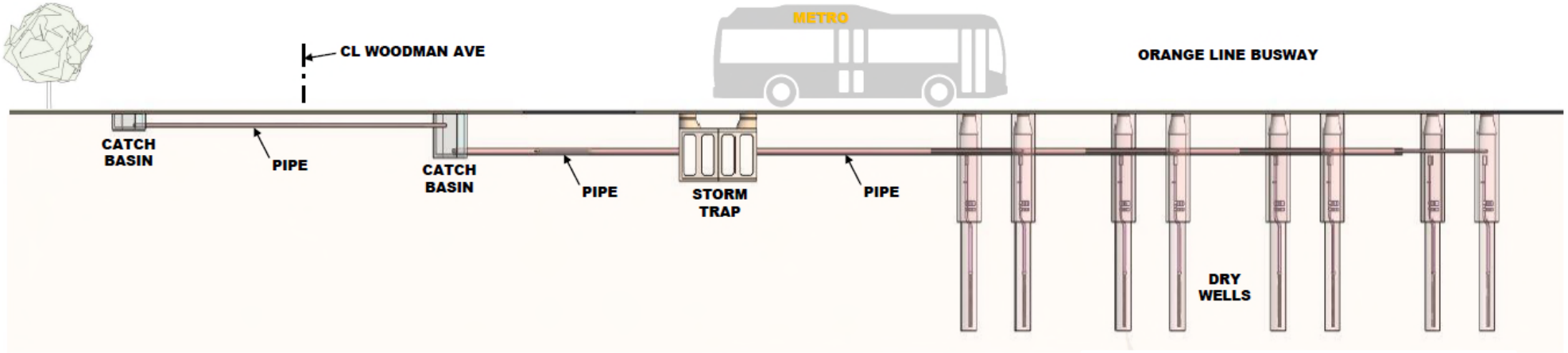
Metro Orange Line Water Infiltration and Quality Project – Example Design Schematic

Pumped Diversion (e.g., MOL-3)

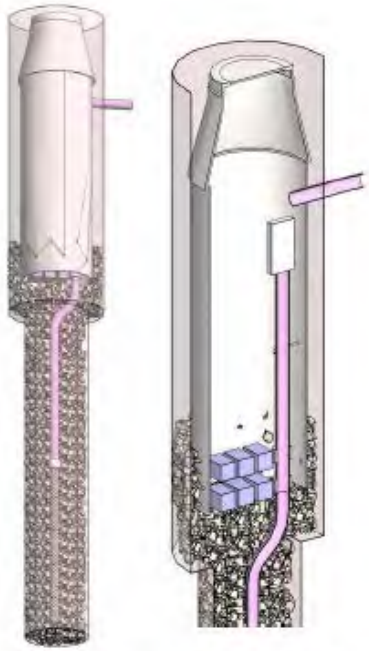


ELEVATION
(LOOKING NORTH)
NOT TO SCALE

Gravity Diversion (e.g., MOL-6)



ELEVATION
(LOOKING NORTH-EAST)
NOT TO SCALE

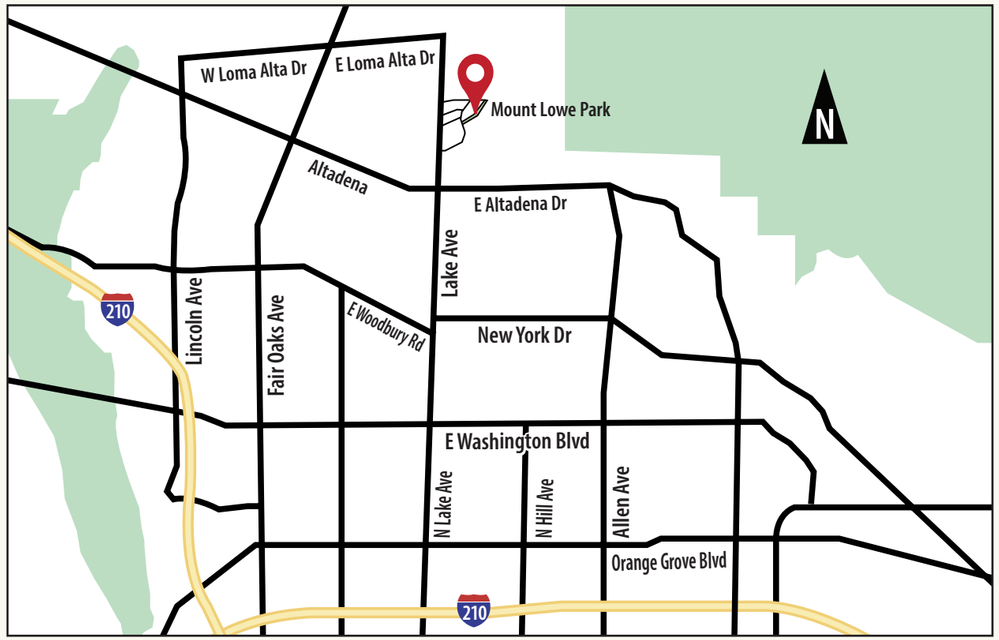


DRY WELL DETAILS

Project Location

Mount Lowe Drive

between Mount Curve Avenue and Maiden Lane
(Altadena)



pw.lacounty.gov
900 S. Fremont Avenue, Alhambra, CA 91803
(626) 300-2304

Mt. Lowe Median
Stormwater Capture Project

Public Works
LOS ANGELES COUNTY

"Lowe"-ring Stormwater Pollution in LA County
Featuring Infiltration, Recharge & Nature-Based Solutions

Increasing Water Supply in the Foothills

This multi-benefit project will transform an existing roadway median in Altadena into a modern, below-ground stormwater and urban runoff system with an above-ground space for residents to enjoy. Infiltration dry wells will be constructed under the medians allowing diverted urban and stormwater runoff to infiltrate into the ground to improve water quality and increase water supply. This project will also activate a new space for the residents, including new features in the form of landscaping and walking paths!

Project Benefits

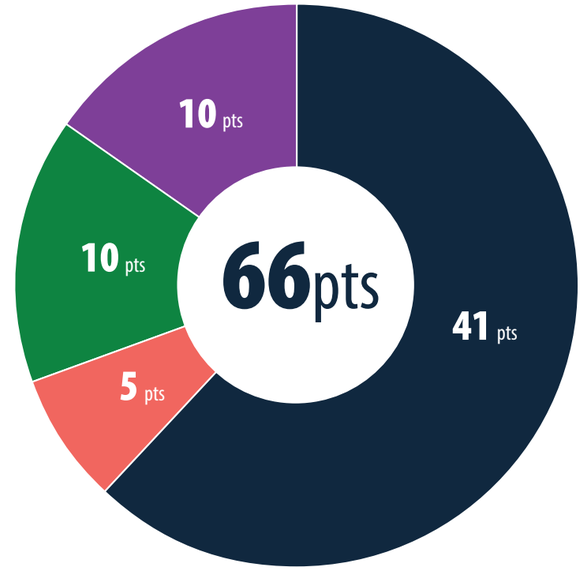
- Water Quality
- Water Supply
- Flood Management
- Open Area Enhancement
- Recreational Opportunities
- Enhance Park/Habitat
- Increased Trees or Vegetation
- Natural Processes

Preliminary Cost Estimate & Schedule

Planning	$	300,000	To be completed – Late 2020
Design	$	500,000	To be completed – Mid 2021
Construction	$	1,600,000	To be completed – Late 2022
Total Project Cost Estimate	**$**	**2,400,000**	
Annual Operation & Maintenance	$	50,000	

Safe, Clean Water Program Score

- Water Quality
- Community Investment
- Nature-Based Solutions
- Funds and Community



Project Specifics

Watershed Area	Upper LA River
EWMP Group	Upper LA River
Unincorporated Community	Altadena
Potential Partners	N/A

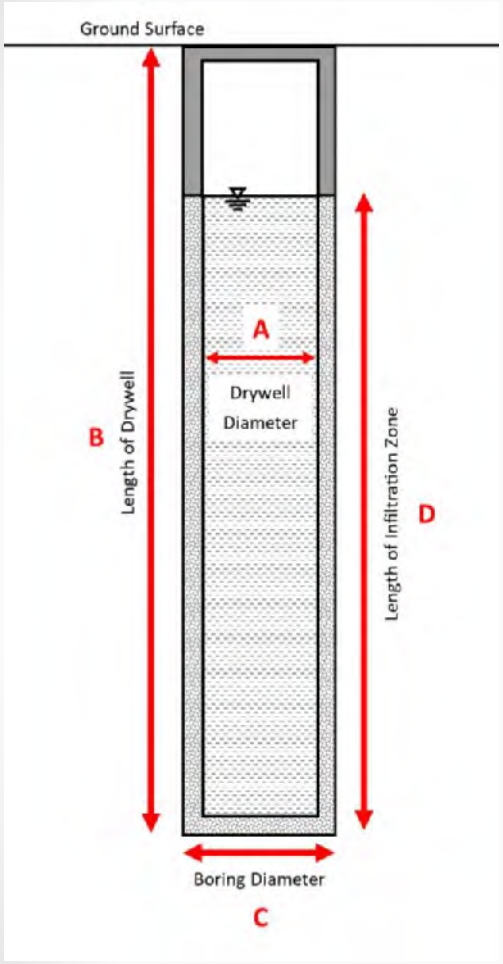
Drainage Area	27 acres
Max Design Capacity	1 acre-feet
Annual Volume Capture	10 acre-feet
Pollutants of Concern	Bacteria, Metals
Grants Awarded	N/A

Public Works
LOS ANGELES COUNTY

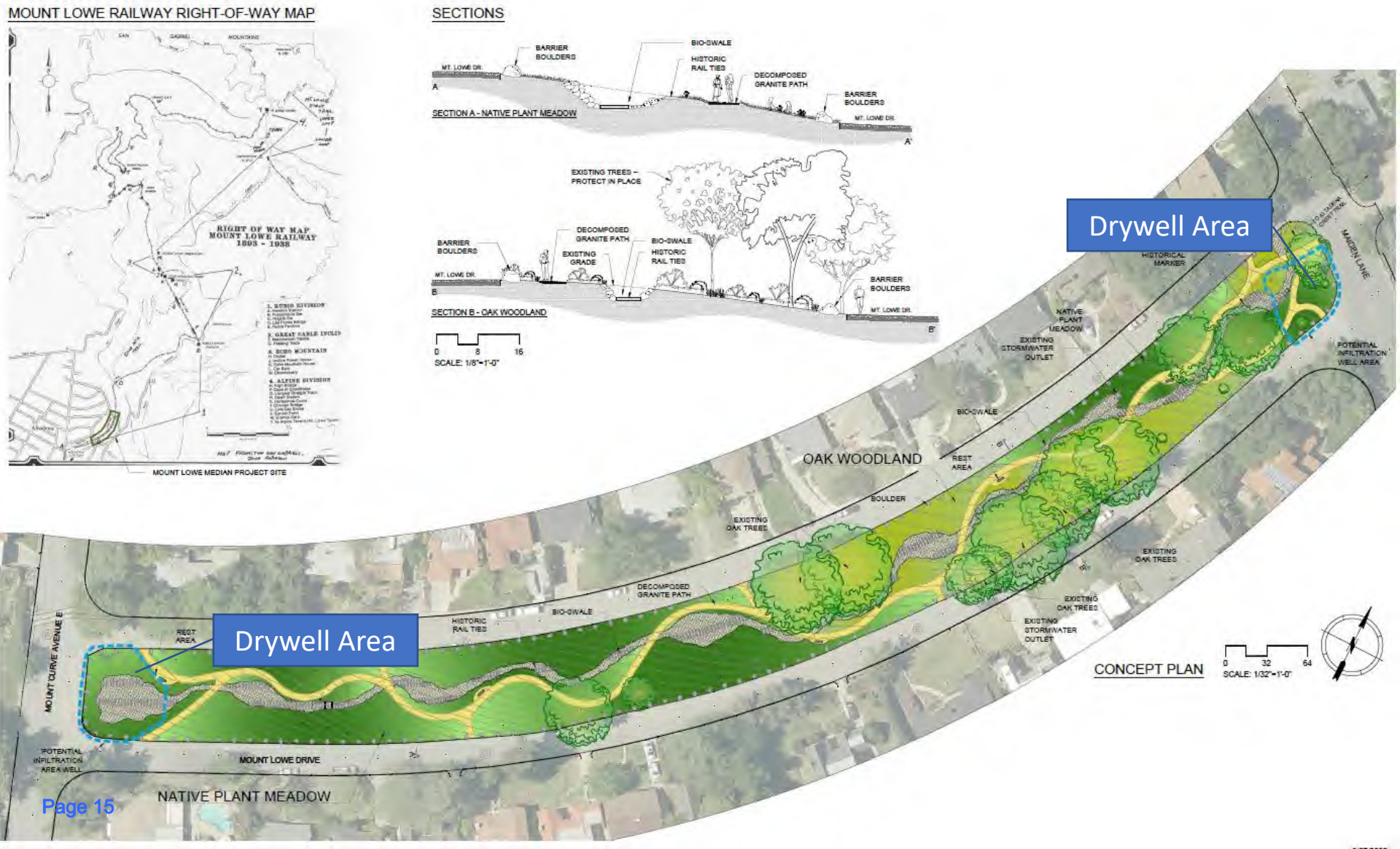
Mount Lowe Drive Median Re-landscaping and Stormwater Capture Project


Mt. Lowe Drainage Area
Marengo Ave
Alta Pine Dr
Rubio Crest Dr
Rubio Crest Dr
Rubio Vista Rd
Farnsworth Park
Parkman St
N Mt Curve Ave
Concha St
Wapello St
Wapello St
Wapello St
Athens St
Mt Lowe Dr
Mt Lowe Dr
N Mt Curve Ave
Alta Vista Dr
Lake Ave
E Las Flores Dr
Malden Ln
E Loma Alta Dr
E Loma Alta Dr
• 27 Acre Drainage Area
• 1 Acre-ft Capacity

Drywells


Ground Surface
A
Drywell
Diameter
B
Length of Drywell
Length of Infiltration Zone
D
Boring Diameter
C

Mount Lowe Drive Re-landscaping Project



Project Layout

Public Works
OS ANGELES COUNTY

Project Rendering

Public Works
LOS ANGELES COUNTY

1. Background

The Project is not specifically described in the Rio Hondo/San Gabriel River Water Quality Group Enhanced Watershed Management Plan (RH/SGR EWMP). However the RH/SGR EWMP discusses green streets, and this project captures the runoff as the stormwater runs off from the upstream neighborhood to the school parking lot. The project replicates capture of runoff from neighborhood scale projects along the flow path of the generated runoff.

Amigos De Los Rios (AdlR) is a 501c3 legacy community and natural infrastructure design and implementation organization whose mission is focus on underserved communities to design and build multi objective project which foster communities that are resilient to the current and projected impacts of climate change and foster a strong green economy. As part of this vision, AdlR has developed the Plymouth School Neighborhood Stormwater Capture Demonstration Project (Project).

The Project consists of greening the Plymouth Elementary School parking lot and creating Low Impact Development (LID) and Green Street design features to capture and infiltrate stormwater runoff. Included in the project will be tree wells and LID planter boxes, green medians, and permeable surface for runoff capture and infiltration. See **Figure 1-1**, which illustrates the drainage area and land uses.

1.1 Site Condition and Constraints

The Project is located in the City of Monrovia. The existing tributary watershed is approximately 12.37 acres and is made up of institutional, and single family land use types. **Figure 1-1** illustrates the project site, tributary drainage area, and a breakdown of the land uses and areas in acres. The existing flow path generally runs from northwest to southeast. Properties drain to the adjacent streets, and the flow for the watershed ultimately reaches Plymouth Elementary School parking lot, where it then travels through the ball fields and ultimately leaving school property towards the south.

Utilities

There is an existing drainage network, B10706, along Jeffries Avenue that runs along the northern boundary of the tributary watershed east, towards Peck Road. The existing drainage system range from 39" to 60" diameter. Other wet and dry utilities will be researched during planning and design stages of the project.

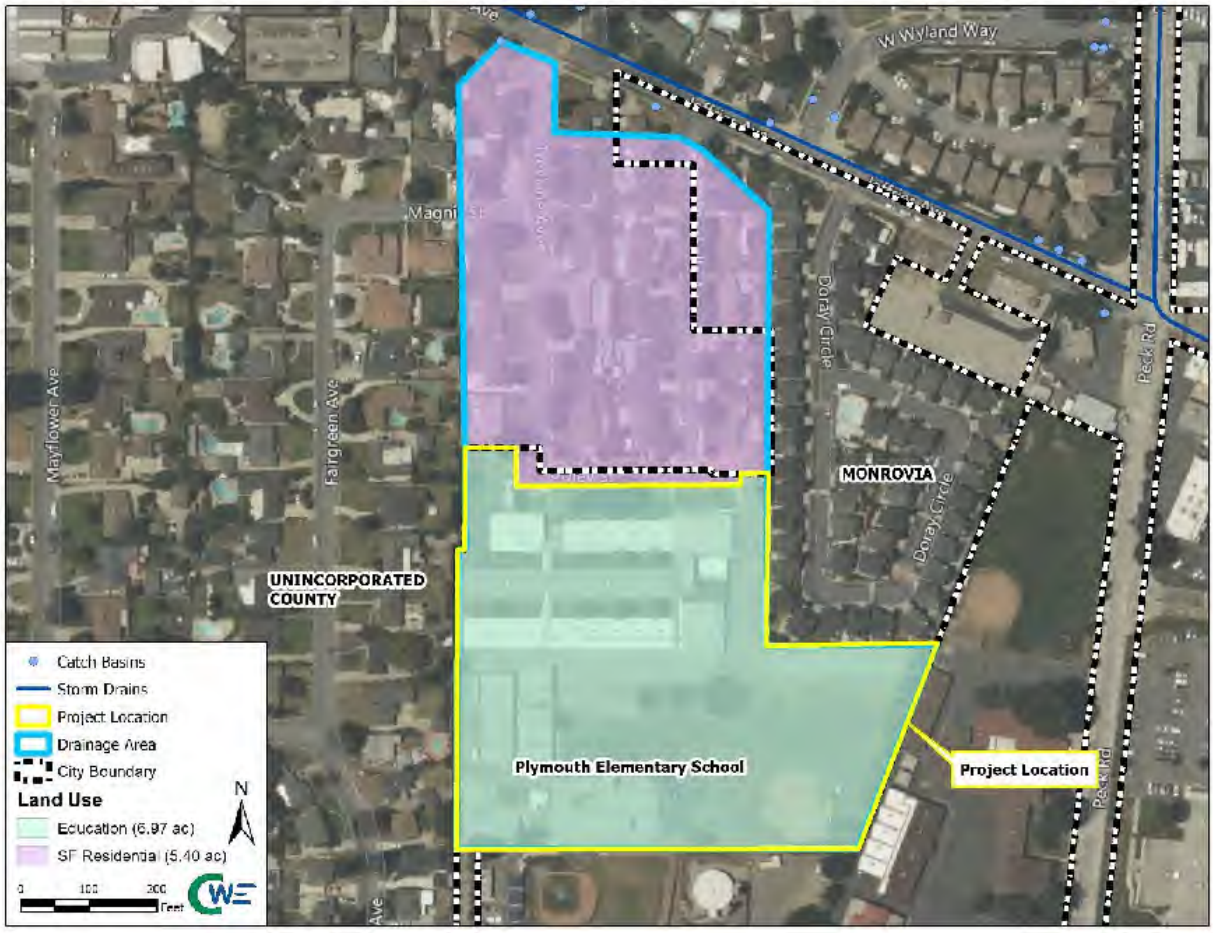


Figure 1-1 Project Site

Geotechnical

There is no existing geotechnical information at this time. However, there have been other project within the area that have geotechnical information that deem infiltration feasible in this general area. A geotechnical analysis will be performed during final design to determine final percolation rates for the project site, and thus the potential for infiltration for the project.

2. Project Purpose and Goals

The Project is part of a larger vision, the Emerald Necklace Forest to Ocean Expanded Plan for Los Angeles County, which outlines a set of strategies and action items to make Los Angeles County a better place to live. Produced by AdlR and The Conservation Fund, with lead support from the California Strategic Growth Council, the new plan provides a pathway for residents to connect with park and recreation lands – improving the overall health of the people and the environment – from the mountains to the sea. This green infrastructure project not only meets the vision plan, but also meets the BMP implementation strategies outlined in the EWMP, thereby also helping to meet Total Maximum Daily Load (TMDL) requirements for bacteria, metals and other pollutants.

Figure 2-1 illustrates the treatment schematic associated with the proposed design. The treatment system would need to be effective at removing bacteria, and other pollutants which would be comprised of retention and infiltration of storm water quality runoff. The treatment system is integrated in the livable environment and decreases the watershed impervious area.

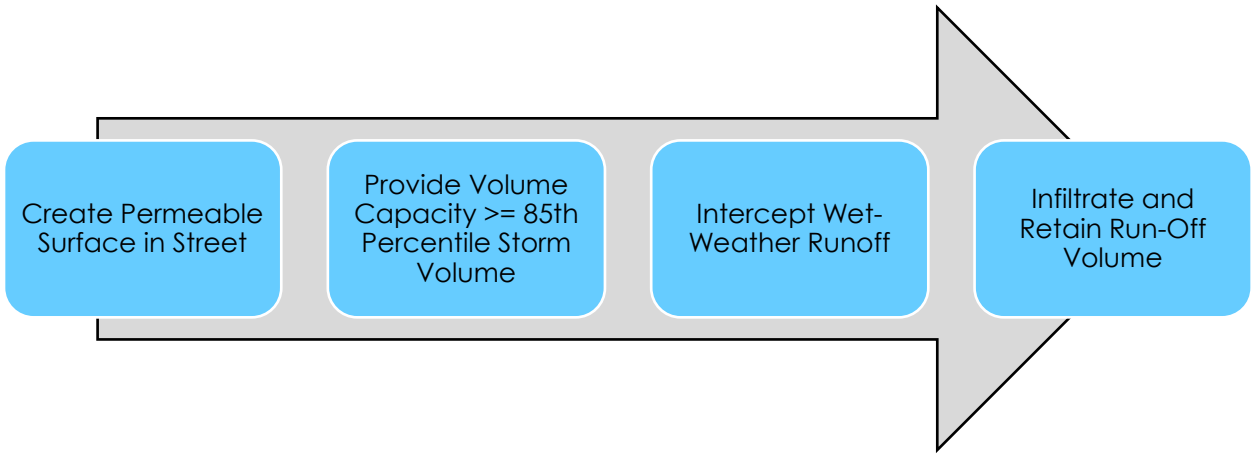


Figure 2-1 General Project Concept

The goals and objectives of the Project are to reduce bacteria, metals, and other pollutant loading in the Rio Hondo Watershed, which the selected treatment approach will do. In summary, the Project goals are as follows:

- Enhance water quality locally and in downstream water bodies
- Reduce bacteria loading and contribute towards meeting LAR Bacteria and Metals TMDL targets (RH/SGR EWMP objective)
- Provide benefits in addition to water quality (water conservation and/or community benefits)

2.1 Outreach

To date, AdlR has worked with Monrovia Unified School District, Plymouth Elementary School, City of Monrovia, and local stakeholders to collaborate on the advocacy, design and implementation of green infrastructure element for the campus. The process was started in 2018 working with Connie Wu –MUSD

Finance Director, MUSD Superintendent and School Board and Dr. Greg Gero, Principal to start applying for funding to enhance this joint-use space while mitigating against flooding (**Figure 2-2**). In 2019, the team involved the City of Monrovia to increase ADA access to site as well as secured funding to start implementation on site with Rivers and Mountains Conservancy. We have worked with Food ED, a nonprofit serving environmental education needs for the Plymouth school the past quarter to incorporate educational plantings and outdoor classrooms on site. ADLR has cultivated a robust Emerald Necklace volunteer steward network made up of community members, students, families, and corporate partners to collaborate and work towards the Emerald Necklace Vision since 2003. Due to COVID, we haven't been able to implement in person community events with these stewards since March, but we are now starting small events with a maximum of 10 folks and have been sharing online volunteer opportunities for community engagement and involvement in this campus transformation. We received 27 letters of support including from agency partners, Community Service Groups, local community based organizations supporting environmental justice & 'Healthy Sustainable Communities', as well as from local chapter representatives of national environmental nonprofits - local Chapters and environmental education and research institutions.

Figure 2-2 School Flooding

3. Proposed Improvements

This section summarizes the proposed project appurtenances and the hydrology calculations to estimate run-off volumes based on the tributary area. The details pertaining to the Green Street and LID approaches, which includes median bio-retention, permeable street surfaces, and planter boxes for bio-filtration. As part of the evaluation, the following will be determined:

- How much storage is needed to meet or exceed the 85th Percentile 24 Hr Storm,
- Whether other supplemental treatment options to go with infiltration will be needed,
- Permeable surface configuration (sizing, media thickness, permeable surface types, etc.)
- Location of treatment infrastructure

The tributary area, soil type, and land use was used to establish the hydrographs for the 85th percentile various storm events, and the resulting peak flow run-off and volumes are summarized in **Table 3-1** below. The input parameters and values are listed below:

Parameter	Value
Area	12.37 acres
85th Percentile RF Depth	1.05 inches
Flow Path Length	1962 ft
Flow Path Slope	0.0056065
Area Imperviousness	0.6454
LA County Hydrologic Soil Type	006

Table 3-1 85th Percentile Flow and Volume Run-Off

Site	85th Percentile Hydrologic Calculation Results	
	Discharge (cfs)	Volume (cf)
Plymouth School Neighborhood Drainage Area	1.31	28,821

The following section describes the proposed project, including layout, storage, and design elements.

3.1 Layout

The green school project is located in the parking lot of Plymouth Elementary School. Improvements include permeable surfaces, trees, plants, infiltration planters, and pervious concrete gutter strips. **Figure 3-1** illustrates the preliminary layout for the Green School Project. Permeable surfaces total approximately 16,375 square feet, and another 3,500 square feet of equivalent permeable area in the biofiltration systems. Assuming the base consists of 2 feet layer of open-graded crushed rock (for all new permeable surface) with 40 percent voids, the base would act to receive and temporarily store up to 15,900 cubic feet of stormwater runoff during a storm event. Assuming infiltration during an event, the new green infrastructure elements will capture, treat, and infiltrate the 85th percentile storm event.

Figure 3-1 Plymouth Elementary Green School Elements

3.2 Storage

Water quality treatment for this project is based on wet-weather runoff capture and infiltration. Permeable surfaces will typically include a sub-grade system of rock that provides capacity for run-off volume retention. The porosity of a gravel bed will typically hold approximately 40% void space for volume capacity. Planter bio-filtration will supplement for additional volume capacity if needed. **Figure 3-2** illustrates a typical cross-section of permeable surface and subgrade storage capacity.

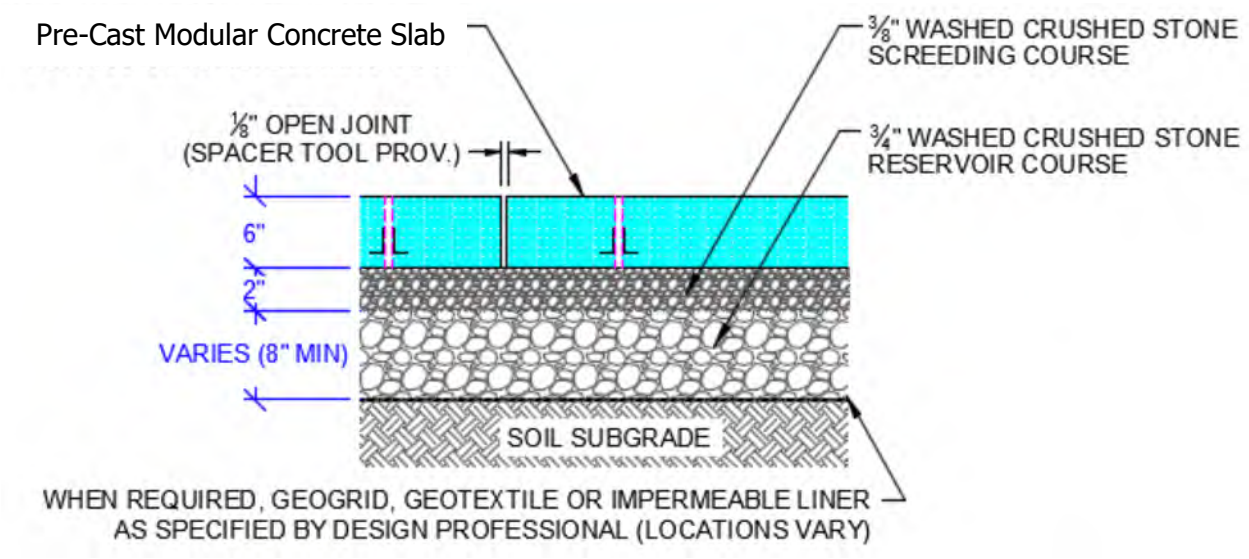


Figure 3-2 Typical Storage Subgrade for Permeable Surfaces

3.3 Design Elements

Features included in the Project that address water quality compliance are permeable surfaces with subgrades, and biofiltration systems such as modular wetlands and rain gardens.

Permeable Surfaces

Permeable surfaces can come in various materials. Permeable pavers are often used in cross-walks and areas of high pedestrian foot traffic for their aesthetic appeal. Pre-cast modular concrete slabs are traffic rated and can be used in parking stalls, ribbon gutters in flow crossings, and gutter plate sections along a curb. Pre-cast modular concrete slabs are also relatively easy and quick to install, and with a right concrete mix, spalling can be minimized. **Figure 3-3** illustrates a layout of concrete slabs during construction.

Figure 3-3 Construction of Pre-Cast Modular Concrete Gutter Slabs

Bioretention Systems

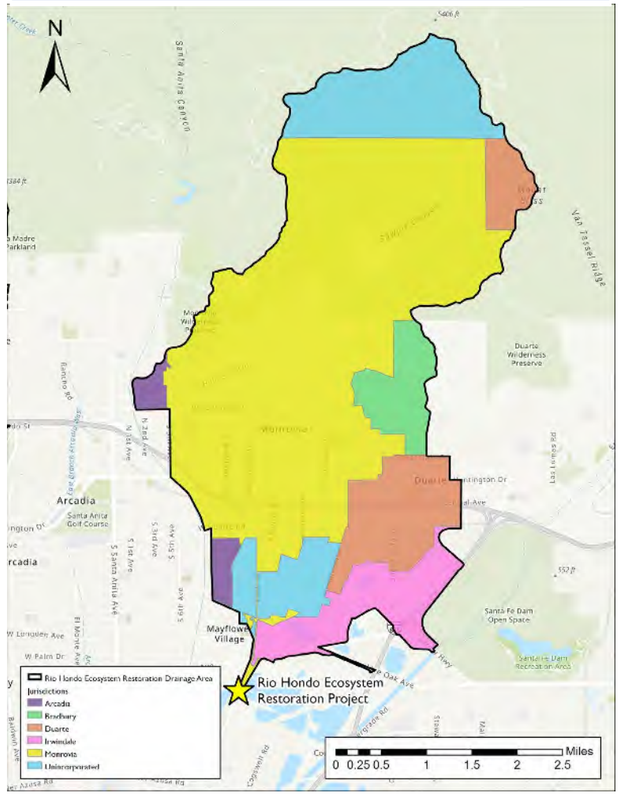
Bio-filtration systems can operate as either flow based or volume based systems. Rain gardens provide bioretention that can be used to capture and infiltrate stormwater runoff, thereby retaining water quality volume to address compliance. Rain garden trees provide shade and reduce the heat island effect, while also enhancing the community and improving air quality. Other community enhancements and reducers of the heat island effect are tree wells and LID planter boxes. Green street design entities considered for project implementation are summarized in **Table 3-2**.

Table 3-2 Summary of Green Street Design Entities

Entity	Description
Pre-Cast Modular Concrete Slabs	➢ Various Applications ➢ Relatively Easy to Install ➢ Can operate as infiltration or as pre-treatment and release into existing storm drain network
Permeable Pavers	➢ Used in high pedestrian traffic areas ➢ Aesthetic Appeal ➢ Used in Pedestrian Crossings ➢ Enhances Community
Bio-filtration Rain Garden	➢ Can operate as infiltration system, or pre-treatment and release into existing storm drain network ➢ Can be placed in parkway or as a median planter ➢ Provides supplemental volume capacity for water quality compliance ➢ Provides shade to decrease heat island effect ➢ Improvement to air quality and enhances community
Trees and Planter Boxes	➢ Reduces the overall heat island effect ➢ Improves air quality and provides shade ➢ Enhances community

EXISTING SITE CONDITIONS

DRAINAGE AREA



DRAINAGE CHARACTERISTICS

REGIONAL WATER MANAGEMENT PLAN	Rio Hondo/ San Gabriel River Water Quality Group
DRAINAGE AREA	**10,681 acres** Monrovia (60.7%) Unincorporated LA County (15.0%) Duarte (10.3%) Irwindale (7.5%) Bradbury (4.6%) Arcadia (1.9%)
INFILTRATION RATE	0.3 inches per hour (assumed in modelling)
APPROX. DEPTH TO GROUNDWATER	54 ft BGS
MODELED AVERAGE ANNUAL RUNOFF VOLUME	4,036 ac-ft per year

Sawpit Wash Channel

Rio Hondo Ecosystem Restoration Project Site

BMP CHARACTERISTICS

LOCATIONS Peck Road Water Conservation Park (5401 Peck Road, Arcadia)
Pick A Part Lot (3333 Peck Road, Monrovia)

LAT: 34°06'22.0"N
LONG: 118°00'27.6"W

Proposed BMP Description: The Rio Hondo Ecosystem Restoration Project is divided into two distinct phases: (1) the Peck Road Park Lake restoration area and improvements, and (2) the cluster of parcels immediately to the north of Peck Road Park Lake encompassed by Live Oak Avenue, Peck Road, and Lynd Avenue (herein referred to as the Pick-a-Part lot. The Phase 1 site is owned and operated by the Los Angeles County, Department of Parks and Recreation and the Phase 2 Pick-A-Part Lot is privately owned by several business owners. **This application only seeks design funds for Phase 1 of the project**. Runoff within this corridor ultimately drains to Sawpit Wash within the Rio Hondo watershed. The project seeks to improve water quality discharged to the Sawpit Wash and to the Rio Hondo Watershed. In addition, the project also proposes to address water supply benefit by restoring the basins in Peck Road Water Conservation Park and rehabilitate areas of the park. The project consists of 2 stormwater diversions from the LACFCD Sawpit Wash Channel. The water captured will be filtered by a combination of pretreatment systems (hydrodynamic separators) and flow through a combination wetland and groundwater recharge basin system ultimately discharging into the two large storage basins in Peck Road Water Conservation Park and subsequently, the Rio Hondo. Phase 1 has a total storage of 36.6 AF/12 MG (76.6 AF Total). This project has the potential to offer runoff storage and water quality benefits for these jurisdictions that can address the additional needs for stormwater management identified to achieve compliance in the rWMP. The project is downstream of the proposed Arboretum Treatment Wetlands and Groundwater Recharge Stormwater Capture Project and will work in tandem to provide watershed wide benefit.

Project Benefits:

- **Water Quality** Improvement in the Sawpit Wash and Peck Road Park Lake by removing trash, metals, and nutrients in stormwater
- **Nature-Based** treatment wetlands and recharge basins with sustainable native landscaping and lake storage
- **Park recreational enhancements** with a wetland/habitat area and a lake restoration
- **Public Access to Waterways** with new public access to natural treatment wetlands and pedestrian pathways

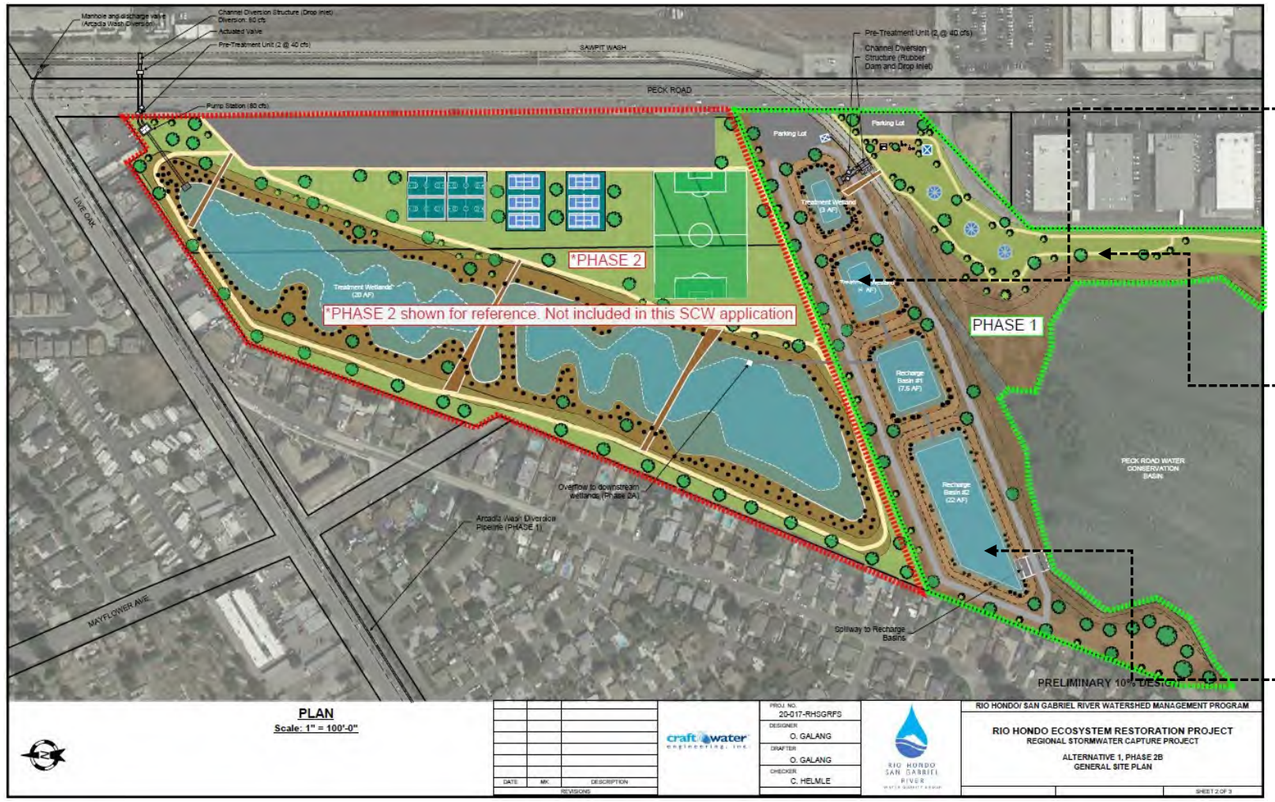
RIO HONDO/SAN GABRIEL RIVER WATER QUALITY GROUP, CITY OF ARCADIA

RIO HONDO ECOSYSTEM RESTORATION STORMWATER CAPTURE PROJECT

FACT SHEET

craftwater engineering, inc.

PROPOSED CONCEPTUAL SITE LAYOUT



Treatment Wetland

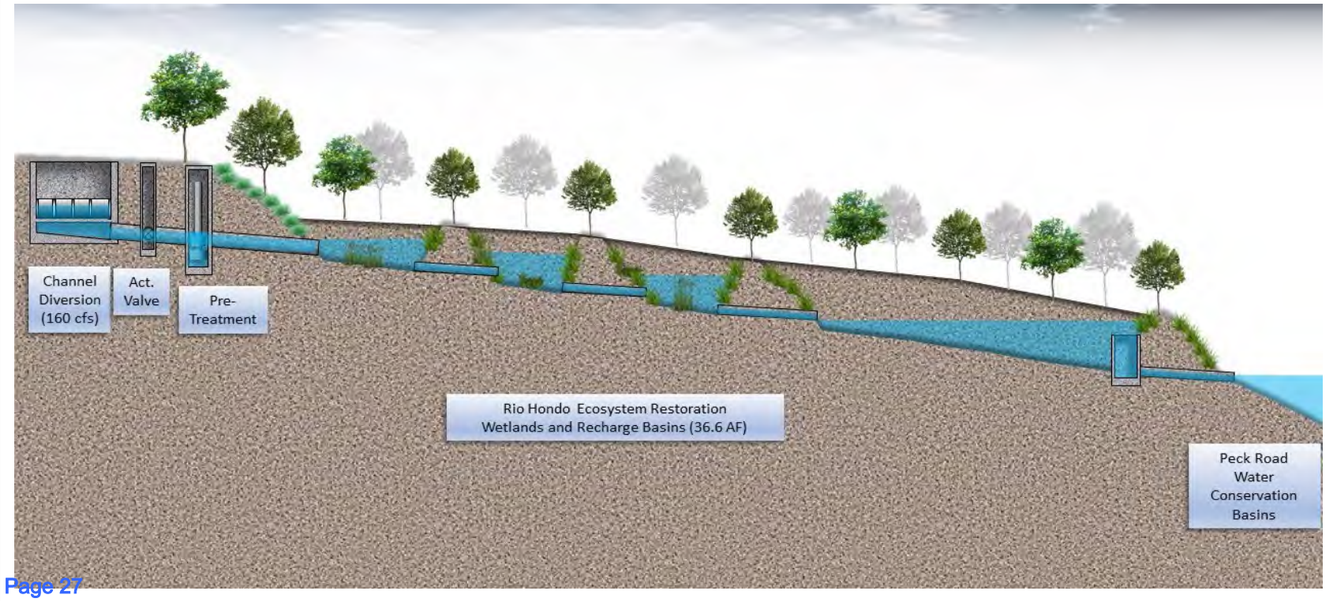
Public Access

Groundwater Recharge Basins

PRELIMINARY SCW SCORING

SECTION	TOTAL COST
A.1 Wet Weather Water Quality Benefits • A.1.1 Water Quality Cost Effectiveness > 1.0 AF/$Million • A.1.2 Pollutant Reduction >50%	 20 20
B. Significant Water Supply Benefits • B1. Water Supply Cost Effectiveness • B2. Water Supply Benefit Magnitude	 10 12
C. Community Investment Benefits • Improved flood management • Creation/enhancement/restoration of parks • Improved public access to waterways • Enhanced/new recreational opportunities • Reducing local heat island effect • Increasing number of trees and/or vegetation	 5
D. Nature-Based Solutions	10
E. Leveraging Funds and Community Support • Strong local, community-based support	 4
TOTAL SCORE	**81**

TYPICAL CROSS SECTION



PROJECT CHARACTERISTICS

<u>Primary Pollutant</u> Zinc Reduction Achieved (% Zn reduction)	461 lb/yr (50.2%) PHASE 1 ONLY
<u>Secondary Pollutant</u> Copper Reduction Achieved (% Cu reduction)	124 lb/yr (54.4%) PHASE 1 ONLY
<u>Design Diversion Rate</u> Sawpit Wash – Phase 1 Sawpit Wash – Phase 2	 80 cfs 80 cfs
Storage Capacity for Natural Treatment Wetlands, Groundwater Recharge Basins, and Peck Road Park Basins	36.6 ac-ft (12 MG) 40.0 ac-ft (13 MG)
24-Hour Capacity	41.0 ac-ft PHASE 1 ONLY
Construction Cost Estimate	$8,390,625 PHASE 1 ONLY

RIO HONDO/SAN GABRIEL RIVER WATER QUALITY GROUP, CITY OF ARCADIA

RIO HONDO ECOSYSTEM RESTORATION STORMWATER CAPTURE PROJECT

FACT SHEET

craft & water engineering, inc.

Primary Components

The San Gabriel Valley Council of Governments (SGVCOG), on behalf of the County of Los Angeles (County) and the Cities of Alhambra, Monterey Park, Pasadena, Rosemead, San Gabriel, San Marino, South Pasadena, and Temple City is implementing the Load Reduction Strategy (LRS) Projects for the Rio Hondo River and Tributaries. The purpose of the Project is to help the agencies comply with the final dry-weather Water Quality Based Effluent Limitations (WQBELs), as specified by the Los Angeles River Bacteria Total Maximum Daily Load (TMDL). The Project includes the Rubio Wash Dry-Weather Diversion, which will capture and treat runoff from Rubio Wash, as shown in **Figure 1**. The Project's primary components will include:

- Diversion Structure
  - Rubber dam
  - Inlet structure
  - Diversion pipe
- Pump Station
- Pretreatment and Treatment System
- Building/Enclosure

Figure 1 Rubio Wash Proposed Conditions

Design Elements

The improvements proposed at Rubio Wash are illustrated in **Figure 1** and located near the intersection of Rosemead Boulevard and Whitmore Street. The location of individual components is described below. Some of the improvements are within the adjacent property, which is owned by a private owner. Opportunities to acquire the full property, partial property, or an easement will be further evaluated during the final design phase. Improvements are located as follows:

- Diversion structure – rubber dam and grated drop inlet within the channel and direct runoff to a gravity-driven pipe
- Pump station – belowground structure downstream of diversion system
- Pretreatment system – anticipated aboveground downstream of pump station
- Treatment system – located in enclosure/building
- Enclosure/building – house UV treatment system and rubber dam control structure

The Project will capture and treat runoff generated within the 9,235-acre drainage area shown in **Figure 2**. The Project will capture dry-weather runoff with a peak diversion rate of 800 gallons per minute (gpm) or 1.78 cubic feet per second (cfs).

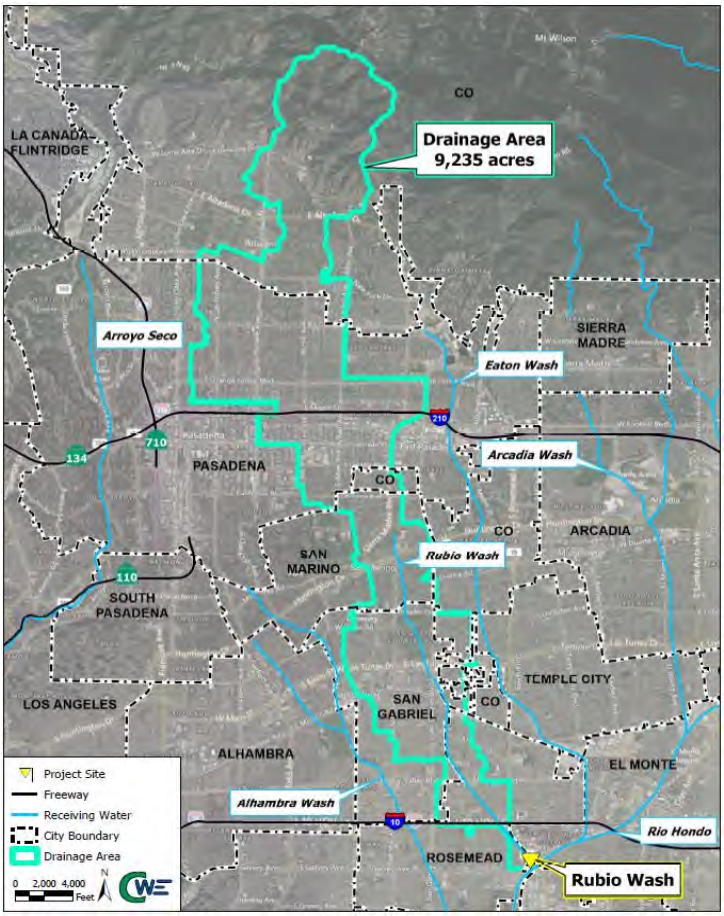


Figure 2 Project Location and Drainage Area Map

Benefits

The Project aims to achieve the water quality goals identified in the Upper Los Angeles River (ULAR) Enhanced Watershed Management Program (EWMP) by enhancing water quality locally. The Project provides multiple benefits, which are summarized below:

- Improve water quality locally and in the Los Angeles River
  - Reduce bacteria loading and discharges from the drainage system
  - Reduce discharge of trash/debris from the drainage system
  - Contribute towards meeting LAR Bacteria TMDL targets
- Provide benefits in addition to water quality (water conservation and/or community benefits)
  - Outreach and educational opportunities for the local community
  - Inform community of water quality challenges and strategies to improve it
  - Installation of permanent educational signage
  - Provide community enhancements, such as street trees and/or swale

Outreach

To date, outreach on the Project has been limited to stakeholders. Several stakeholder meetings have been held, which have included the implementing Cities and other local agencies that may be impacted by the Project. Project information will be shared with the public during the engineering and construction phases to address concerns, answer questions, and give updates. Public outreach meetings are expected to be conducted virtually using an online platform. It is anticipated that the public and nearby residents will be notified about the meeting though online postings, postcards, and/or the local newspaper.

Estimated Project Scoring

The Project has an estimated score of 62 points. Most of the points are earned from the water quality (dry) section as shown in **Figure 3** for addressing bacteria loading and other pollutants within the Rio Hondo and Los Angeles River. **Table 1** summarizes the points earned and includes a description of how the points were determined in the Safe Clean Water Program Module. Additional details are included in the Feasibility Study and funding application.

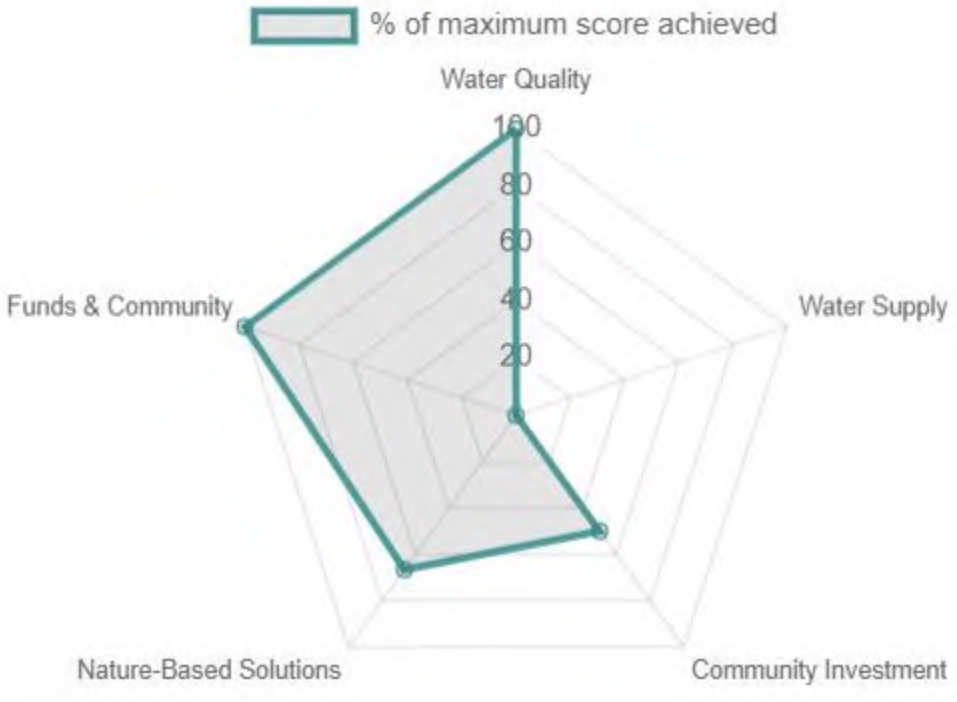


Figure 3 Maximum Score of Each Scoring Section

Table 1 Summary of Project Scoring in Safe Clean Water Program Module

Category	Points	Description
Water Quality Wet + Dry (Part 1 and Part 2)	40	Project is expected to capture 100% of dry-weather runoff from a drainage area greater than 9,200 acres
Community Investment	5	Enhancing recreational opportunities, reducing heat island effect, and increasing shade through the planting of additional trees
Nature-Based Solutions	10	The pump well will promote infiltration, mimicing natural processes and natural materials will be used to plant trees and/or a swale
Leveraged Funding	10	At least 50% of the funding will be matched and the Project has support form local non-governmental organizations or community-based organizations
Total:	**65**	

Slauson Connect Clean Water Project Fact Sheet

SLAUSON CONNECT
Clean Water Partnership

Project Overview

The Slauson Connect Clean Water Project: An integral element of LA City Council District 9's 'Slauson Connect Clean Water Project' proposes a suite of multi-benefit Green Stormwater Infrastructure (GSI) in the Wildasin neighborhood of South Los Angeles, in conjunction with Council District 9's proposed development of the Slauson Connect Community Center site.

The proposed improvements treat runoff from up to 22 acres which ultimately drain to Ballona Creek. 100% of the Project area is within a Severely Disadvantaged Community (SDAC). The following proposed improvements will not only be environmentally beneficial but will also provide community investment benefits. The Project components include:

A. Cistern with multi-use surface along eastern end of a 2.25-acre parcel operated by the City of Los Angeles between S Normandie and Budlong Avenues

- This parcel is the proposed site for the Slauson Connect Community Center.
- Prior to entering the 1.5 ac-ft cistern, stormwater will be pretreated to remove trash and sediment. Stormwater would then be pumped through a disinfection treatment before being used to irrigate landscaping at the Slauson Connect site.

B. Two Green Alleys upstream of cistern at Slauson Connect site

- Retrofit of two E-W alleys between W 58th and W 56th Streets, which collect and treat stormwater from 5 acres within the 22-acre watershed upstream of the proposed cistern.
- Bypass from the Green Alleys will flow downstream toward the cistern via surface flow.
- A new storm drain inlet at the southwest corner of Budlong Avenue and West 58th Street will convey stormwater to the new subsurface cistern.

This project aligns with the goals and objectives of the South Los Angeles Green Alley Master Plan (AMP), which aims to redesign alleys in South Los Angeles as greener, safer, and smarter community spaces, working in concert with other project GSI to provide environmental and community health benefits.

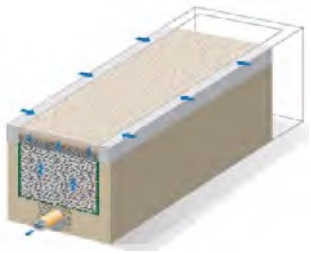
Project Summary

- In total, the Project proposes to treat stormwater runoff from 22 acres, provide 24-hour storage of 1.75 acre-feet, and capture 12.4 acre-feet/year.
- Funding request for the project is $4.9 million.
- Project preliminarily achieves 62 points in Safe Clean Water Program scoring.

CD9 Slauson Connect Project

Cistern

Pretreatment



Green Alleys


Green Alleys
Cistern, Trees & Garden
Slauson Connect
Slauson Ave
Project Location
SLAUSON CONNECT
Clean Water Partnership

Primary Components

The City of Manhattan Beach (City) is implementing the 28th Street Storm Drain Infiltration Project (Project) to improve water quality at the beach and in the Santa Monica Bay by reducing discharges from the storm drain system. The Project will capture and infiltrate runoff and is split into two phases, as shown in **Figure 1**. Phase 1 includes improvements at the 26th Street Parking Facility and Phase 2 is focused on the beach. The Project's primary components for Phase 1 and Phase 2 will include:

- Phase 1:
  - Diversion structure (will be used with Phase 2 also)
  - Pretreatment unit (will be used with Phase 2 also)
  - Pump station (will be used with Phase 2 also)
  - Approximately 48 drywells
  - Permeable pavement and trees in the 26th Street Parking Facility
- Phase 2:
  - Infiltration trench (Phase 2 only)
  - Dune restoration (in partnership with other City departments)

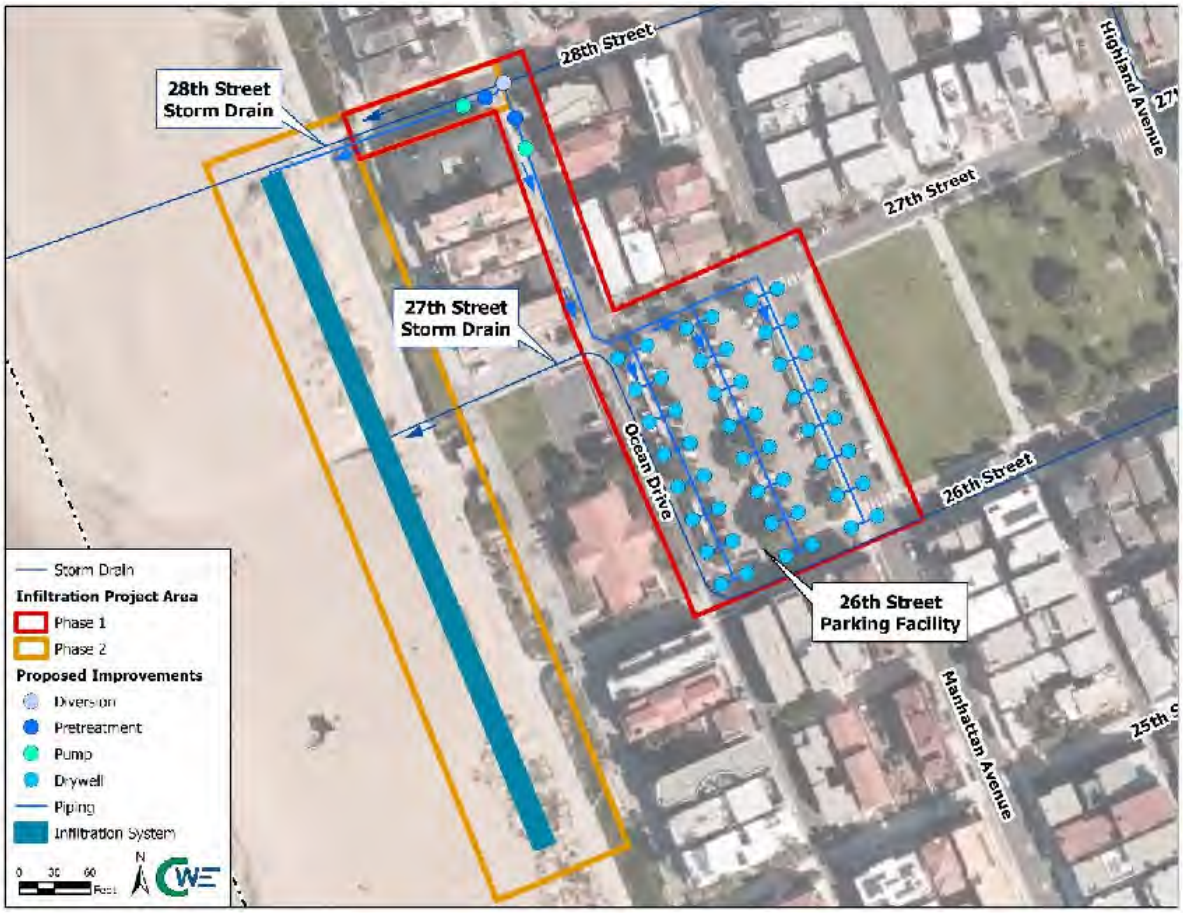


Figure 1 Phase 1 and Phase 2 Concepts

Design Elements

The Project location and phasing is illustrated in **Figure 1**. Improvements are located as follows:

- 26th Street Parking Facility (Phase 1) – bounded by 26th Street, 27th Street, Manhattan Avenue, and Ocean Drive
- Public right-of-way surrounding the parking facility and on Ocean Drive and 28th Street (Phase 1 and Phase 2) – exact limits and locations will be finalized during the design phase
- Beach parallel to The Strand between 28th Street and 25th Street (Phase 2)

The Project will capture and infiltrate runoff generated within the drainage area shown in **Figure 2**, which is approximately 1,520 acres. The single storm capture volume is expected to be the following:

- Phase 1: Approximately 55 acre-feet
- Phase 2: Up to 10 acre-feet
- Total: 63 acre-feet (one-inch storm event – more than the 85th percentile storm event)
- Safe Clean Water Program Module: 478 acre-feet per year (24-hour capacity: 130 acre-feet)

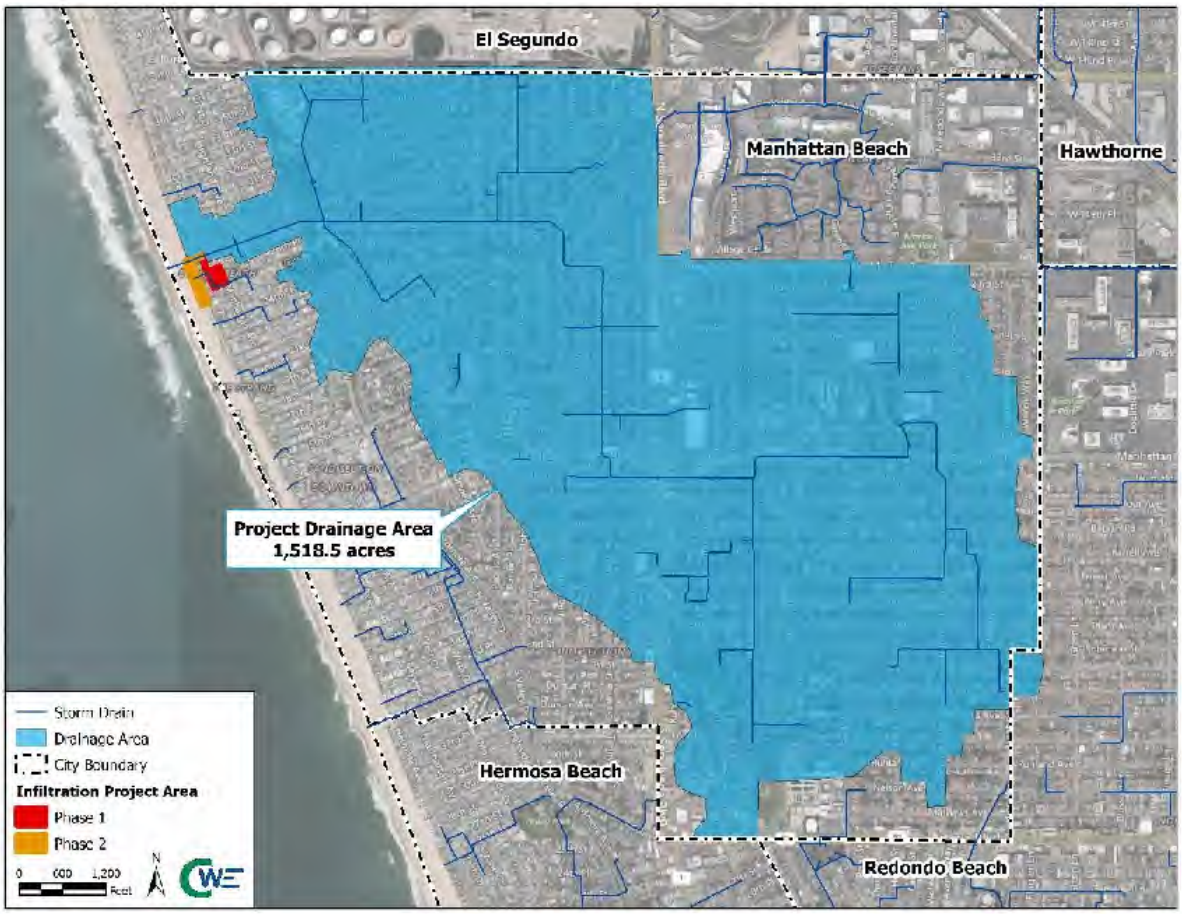


Figure 2 Project Location and Drainage Area Map

Benefits

The Project aims to achieve the water quality goals identified in the Beach Cities Enhanced Watershed Management Program (EWMP) by addressing discharges from the 28th Street Storm Drain to the Santa Monica Bay. The Project provides multiple benefits, which are summarized below:

- Improve water quality locally, on the beach, and in the Santa Monica Bay
  - Reduce bacteria discharges from drainage system
  - Reduce discharge of trash/debris from drainage system
- Enhance beach conditions
  - Reduced debris from the upstream drainage system
  - Reduce the potential for odors related to drainage system
- Reduce the potential for beach closures
- Create opportunities for education and outreach in local communities
  - Inform the community of water quality challenges and strategies to improve it
  - Install permanent educational signage
  - Engage in dialogue with stakeholders and the public through community meetings
- Provide an enhanced environment for marine life
- Improve the 26th Street Parking Facility through native landscaping and permeable pavement

Outreach

Several stakeholder meetings have been hosted by the City to discuss the Project (four within the month of September 2020 and continuing after the Safe Clean Water Program application is submitted). A public outreach meeting was conducted on September 17, 2020 via Zoom. The public and nearby residents were notified about the meeting though social media, postcards, and a posting on the City's website. Feedback was received regarding the use and closure of the 26th Street Parking Facility. Additional outreach meetings will be held during the design and construction phases to address concerns, answer questions, and give updates. The postcard mailed to nearby residents is illustrated in **Figure 3**.

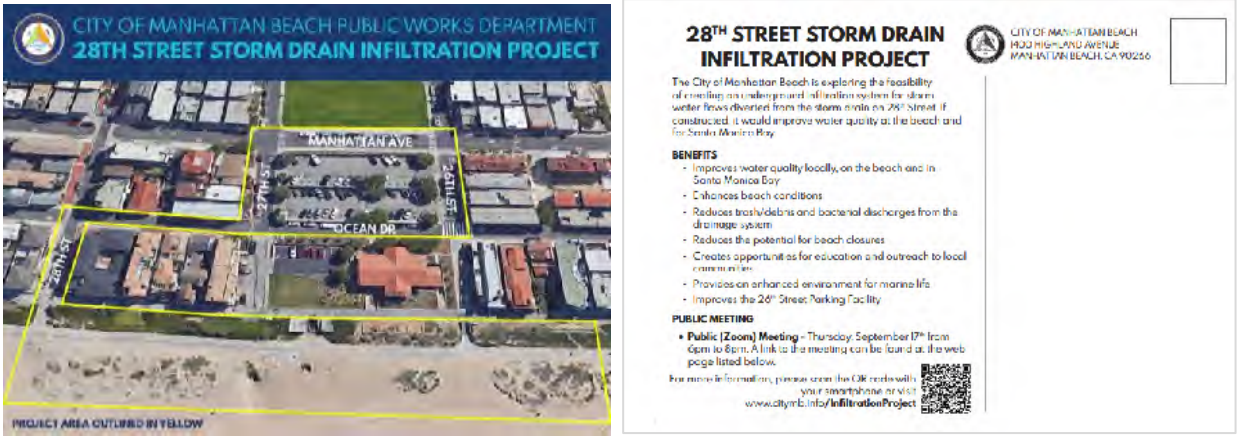


Figure 3 Informational Postcard

Estimated Project Scoring

The Project has an estimated score of 79 points. Most of the points are earned from the water quality (wet and dry) section as shown in **Figure 4** for addressing bacteria loading and other pollutants within the Santa Monica. **Table 1** summarizes the points earned and includes a description of how the points were determined in the Safe Clean Water Program Module. Additional details are included in the Feasibility Study and funding application.

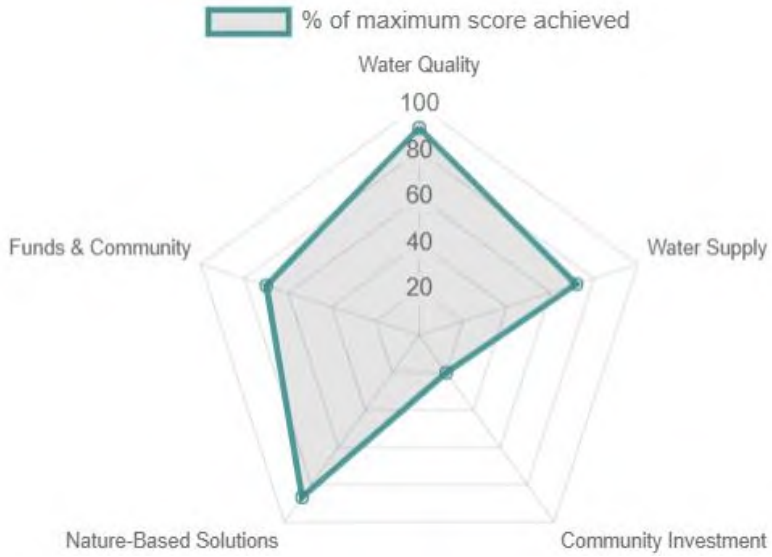


Figure 4 Maximum Score of Each Scoring Section

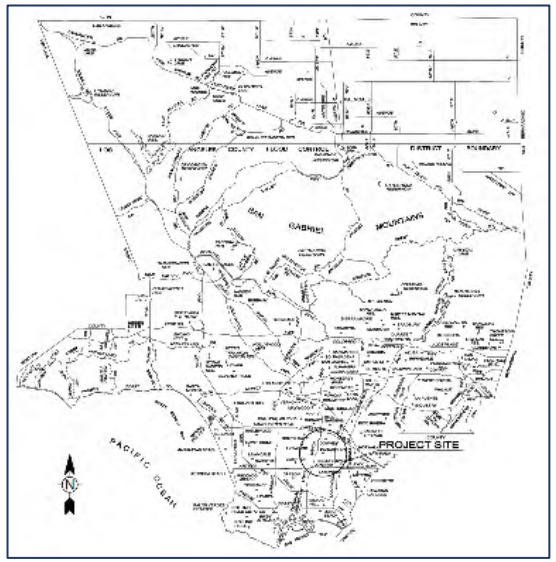
Table 1 Summary of Project Scoring in Safe Clean Water Program Module

Category	Points	Description
Water Quality Wet + Dry (Part 1 and Part 2)	45	Cost effective project when comparing volume capture to total cost and reduces bacteria and other pollutant loading to the Santa Monica Bay
Water Supply (Part 1 and Part 2)	18	Captures and infiltrates 477 acre-feet of runoff per year and is cost effective
Community Investment	2	Reducing local island effect and increasing shade through the planting of additional trees
Nature-Based Solutions	13	Replacing asphalt with permeable pavement, enhancing the landscape with additional trees and vegetation, and promoting infiltration, which naturally occurred prior to development
Leveraged Funding (Part 1 and Part 2)	7	Letters of support were obtained from several local Non-Profit Organizations and Community-Based Organizations and the cost share is greater than 25%, as the City will continue operation and maintenance outside the current request
Total:	**85**	

Spane Park | City of Paramount
Infrastructure Program

Project Overview

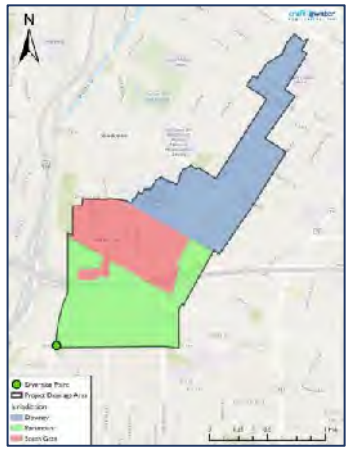
Location:
- Spane Park, a city-owned park in Paramount
- Tributary to LA River
- Located in a disadvantaged community
- Identified as an optimal regional project location in the Lower Los Angeles River Watershed Management Program (LLAR WMP)



Key Benefits:
- Water quality
- Water supply
- Community investment
- Recreational opportunities

Funding Request: $891,984 to complete Project design

Site Considerations



- The LLAR WMP identified Spane Park as an ideal site for the installation of a regional BMP to support the Watershed Management Group's effort to attain its TMDL/WMP compliance targets.
- The proposed Project site has a drainage area of 1,338 acres that encompasses portions of the jurisdictions of Paramount, Downey, and South Gate.
- The proposed Project site is suitable for infiltration and a combination infiltration/filtration practices was recommended in the Preliminary Design Report.
- A large Flood Control District storm drain underlies Rosecrans Avenue, the northern border of the park.
- The City has imminent plans to rehabilitate park facilities to provide the community with enhanced recreational opportunities. Notably, this will include the installation of the first public-use soccer field in the City.

Water Quality & Supply

- The Project will take the opportunity of pending rehabilitation to install a 3.5-acre-foot capacity regional stormwater capture and infiltration facility.
- Other components include a bioswale along the north end of the park, an ephemeral stream, permeable pavements and bioretention areas within the parking lots and pathways, and native California landscaping in the picnic area.
- The project will address total zinc as the primary pollutant and bacteria as the secondary pollutant.
- A pump and filter system provide final pollutant removal prior to discharge back into the storm drain channel during larger events, while smaller events are anticipated to infiltrate.
- The Project is connected to a managed water supply aquifer (Central Basin of the Coastal Plain, Los Angeles aquifer) and will augment groundwater supply.

Spane Park | City of Paramount
Infrastructure Program

Community Benefits

Community Benefits:
- Improved flood management (via the system's detention and thereby flood retention capabilities)
- Enhanced park space (via the installation of a new soccer field and an ephemeral stream supplied by the captured stormwater)
- New recreational opportunities (via the installation of the first City-owned soccer field)
- Enhanced green spaces for schools (Spane Park is immediately adjacent to Los Cerritos Elementary School)
- Reduced heat island effect (via the planting of additional native trees, shrubs, and grasses to be installed at select spots impacted by the construction throughout the park)
- Increased tree shade (via the planting of native trees)

DAC Considerations:
- The project is located within a disadvantaged community.

Outreach:
- The City has included approximately $100,000 for public outreach efforts in its funding request and intends to conduct an active public outreach campaign during the design and permitting phases.
- Outreach efforts will include community workshops, consideration and incorporation of public feedback, and Project signage and announcements.
- The target audience is local community residents and businesses.

Nature-Based Solutions

- An ephemeral stream will be installed along the northern part of the park. The swale is sized to convey flow from the storage unit.
- Permeable pavements or equivalent LID elements will be installed in the parking lot.
- Landscape plans post construction include additional native trees, shrubs, and grasses to be installed at select spots impacted by the construction throughout the park.

In 2012, the City of Torrance (City) began the planning, design, and implementation of the Stormwater Basin Enhancement Project to three flood control basins tributary to the Los Angeles County Flood Control District (LACFCD) storm drain line Bond Issue (BI) 1105 U2 Line A (Herondo Drain). These basins include Amie, Henrietta, and Entradero Basins in the western part of the City, south of 190th Street and west of Hawthorne Boulevard (Amie Basin is 1,000 feet east of Hawthorne). This effort was in response to reducing bacteria levels in receiving waters during the dry season.

The Herondo Drain collects stormwater from portions of the cities of Torrance, Redondo Beach, Hermosa Beach, and Manhattan Beach. These four cities, in addition to the LACFCD make up the Beach Cities Watershed Management Group (BCWMG) with the charter to implement water quality control measures that will assist the BCWMG in compliance with the Santa Monica Bay Beaches Bacterial Total Maximum Daily Loads (SMBBB TMDL) Waste Discharge Requirements of the current NPDES - MS4 Permit. Amie, Henrietta, and Entradero Basins are connected by a series of lateral storm drains to the Herondo Drain. Amie Basin is a sump that is connected to Henrietta Basin by the Miscellaneous Transfer Drain (MTD) 926 where the Amie Basin Pump Station and Force Main transfer retained stormwater to Henrietta Basin. Henrietta Basin is directly connected to BI 1105 U2 Line B (Herondo Drain) by an outlet tower in the northeast corner of the basin. Stormwater that enters through the outlet tower in Henrietta drains north by gravity to the main Herondo Drain located in 190th Street. Before reaching the main stem of the Herondo Drain, BI 1105 U2 Line B goes under Entradero Basin that is connected to the storm drain by an outlet tower similar to Henrietta Basin.

The Stormwater Basin Enhancement Project, completed in 2015, can be summarized as improvements to each basin aimed towards retaining and treating dry-weather flows and runoff from small storm events by natural means including constructed wetlands and infiltration areas. The Stormwater Basin Expansion Project (Project) is to improve the basins to retain and treat the 85th percentile storm event Design Capture Volume (DCV). The following sections outline the proposed improvements to each basin to achieve the retention, storage, infiltration, and/or treatment of the DCV at a conceptual level.

Amie Basin

Amie Basin is a 4.27-acre rectangular detention basin with a natural bottom and concrete lined sides without a gravity outlet. There are three large storm drain gravity outlets draining into the basin that collect flows from an approximately 400-acre tributary area. The basin discharges through a pump station connected to a 24 inch diameter force main in Spencer Street where it connects to a gravity storm drain and outlets into Henrietta Basin.

The Stormwater Basin Enhancement improvements included:

- Reconfiguration of the basin bottom with a series of berms to allow for a longer path of flow and to avoid "short-circuiting" of incoming flows to the pump station
- Upgrading the existing open-pit submersible pumps to a pre-cast wet well pump station with three new submersible pumps with a combined discharge capacity more than 2.5 times higher
- Installation of new pump controls
- Installation of an irrigation system and pump to use basin water for irrigation
- Planting of native plant landscaping

The pump configuration consists of three stormwater pumps and one irrigation pump. Two stormwater pumps have peak discharge rates of five (5) cubic feet per second (cfs), and the third stormwater pump has a peak discharge rate of 10 cfs. Each pump is equipped with variable frequency drives which can adjust the speed of the pump motor and the pump discharge.

The basin invert is very close to groundwater and infiltration will not be effective. The upper half of the basin is concrete lined side which eliminates excavation as an option to increase stormwater retention. Raising the water level in the basin to increase the storage capacity is the only viable option and can be achieved by modifying the pump on/off control levels. Currently the level when water enters the pump station wet well is 33 feet above mean sea level (MSL). Below 33 feet, water in the basin is stored and treated by biological processes such as in wetlands. Above 33 feet MSL, stormwater is stored until it is discharged through the force main and into MTD 926 storm drain which flows into Henrietta Basin.

Henrietta Basin

Henrietta Basin is a 6.86-acre elongated rectangular detention basin with natural bottom and sides. The basin is divided in two parcels, north and south with a raised peninsula connected to the west side at approximate street level. The detention basin has a total of five outlets draining into the basin from a 550-acre watershed and flows pumped from the Amie Basin. Henrietta Basin discharges through an outlet tower connected to a LACFCD's BI 1105 U2 Line B, a primary lateral to the Herondo Drain.

The Stormwater Basin Enhancement improvements at Henrietta Basin were focused on the north basin with improvements to access roads and an interpretive "classroom" on the peninsula. Improvements include:

- Reconfiguration of the north basin bottom with a series of berms and weirs to allow for a longer path of flow and to avoid "short-circuiting" of flows to the outlet tower
- Varied the depth of the basin invert between berms to incorporate different zones, e.g., open water zones, emergent vegetation zones, and an island that may become temporarily inundated
- Constructing the weir to the outlet tower to increase basin retention volume
- Structural replacement of three storm drain outlets to the north basin
- Improvements to the access road around the perimeter of the north basin, along the south side of the south basin, and along the east side of the entire basin
- Construction of retaining walls to facilitate improvements to the access roads
- Construction of an outdoor classroom as an interpretive and public education center
- Cut openings and install wrought iron fencing for viewing in the perimeter block wall along Henrietta Street
- Installation of an irrigation system and pump to use basin water for irrigation
- Planting of native plant landscaping

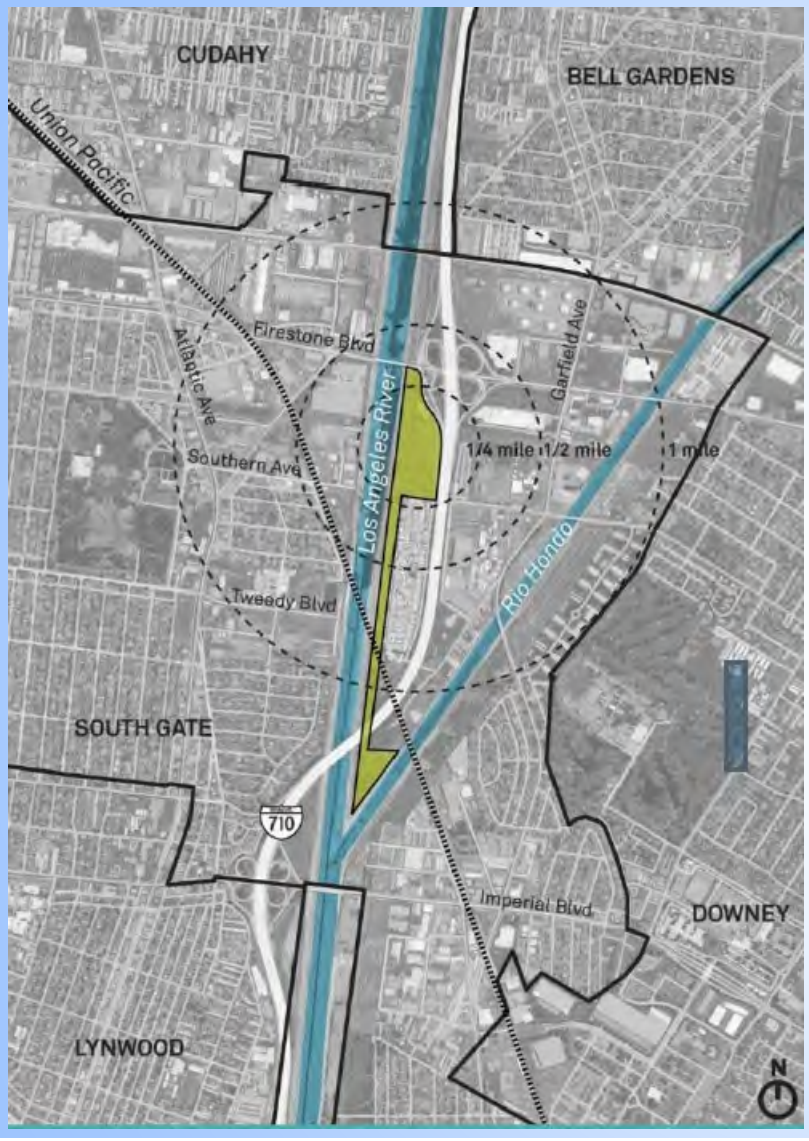
Entradero Basin

Entradero Basin is a 25-acre basin that serves the community as a multi-purpose recreation area termed Entradero Park with amenities such as walking trails, observation platforms, five baseball fields, a playground area, soccer field, basketball courts, dog park, parking lots, and infiltration basin. The infiltration basin receives flows from a 450-acre watershed through four storm drains, two directly enter the basin from the north through improved concrete outlet structures; the other two enter the basin as open channels, one from the south, and one from the west. The entire basin discharges through an outlet tower similar to the outlet at Henrietta Basin and is connected to the BI 1105 U2 Line B by a 48-inch RCP lateral.

The Stormwater Basin Enhancement improvements included a variety of construction efforts to improve the operation of the existing infiltration basin and general aesthetics in the park:

- Grade the infiltration basin to improve storage and infiltration capacity
- Construct concrete outlet structures for the two drains that outlet to the basin from the north
- Improve perimeter access roads and construct ADA compliant observation platforms
- Construct new pedestrian bridge
- Construct reinforced concrete box culvert for vehicular access
- Install concrete block mat in the open channel entering the infiltration basin from the south
- Construct Keystone gravity wall to create a walking trail on the west side of the park
- Rehabilitate slope in the southeast corner of the park
- Install concreted riprap in the channel entering the basin from the west
- Install reclaimed water line to point of connection on Halison Street and retrofit park and baseball fields to use recycled water
- Install recycled water irrigation system around the basin
- Plant native plant landscaping around the basin
- Improve the existing trail system

Urban Orchard Project



Along the Lower LA River in the City of South Gate, 30 acres of post-industrial land will become the centerpiece of a community-driven revitalization effort. The Urban Orchard is a multi-benefit park with a wetland for capturing dry-weather runoff and significant new habitat and recreational features.

FROM LOT TO SPOT

Stillwater Sciences

TURPIN & RATTAN ENGINEERING, INC. CONSULTING ENGINEERS

TETRA TECH

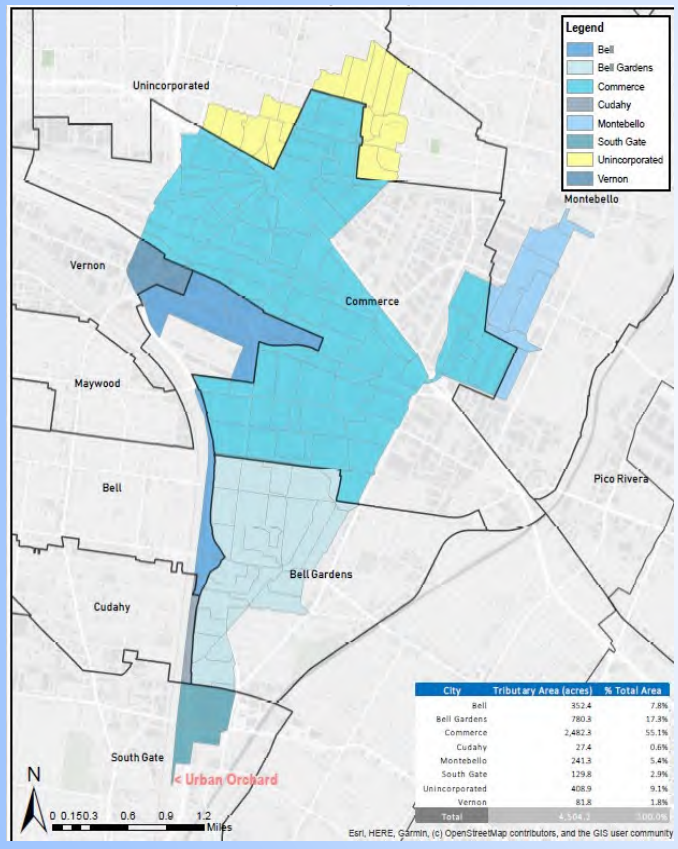
STUDIO-MLA

City of South Gate

THE TRUST FOR PUBLIC LAND

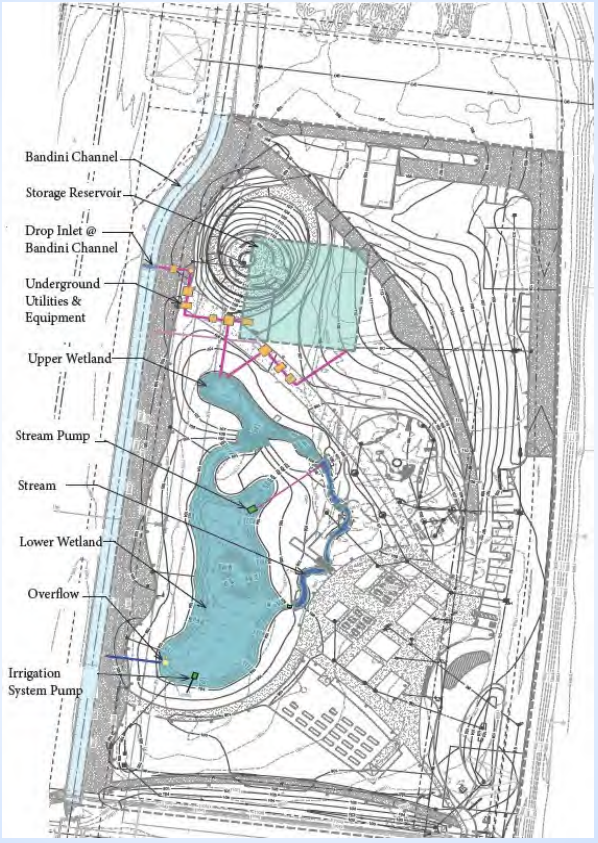
Urban Orchard Project

Upstream City Tributary Area



City	Tributary Area (acres)	% Total Area
Bell	352.4	7.8%
Bell Gardens	780.8	17.3%
Commerce	2,482.3	55.1%
Cudahy	27.4	0.6%
Montebello	241.3	5.4%
South Gate	129.8	2.9%
Unincorporated	408.9	9.1%
Vernon	81.8	1.8%
Total	4,504.2	100.0%

Treatment Facility



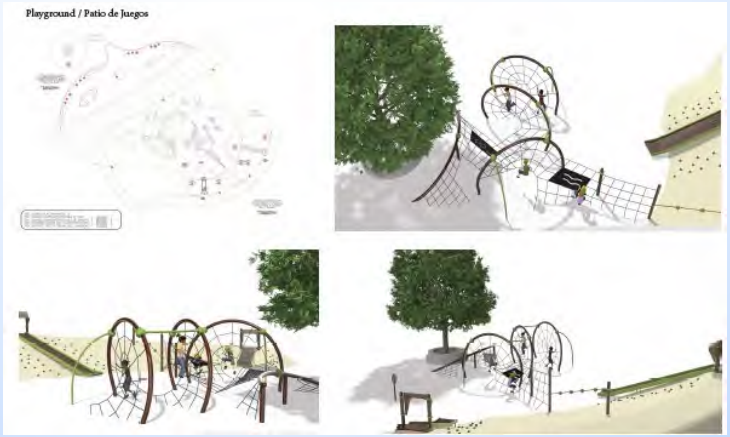
Wetland BMP Summary:

- 4,504.2 acres watershed drained via the Bandini Channel
- 1 cfs est. average inflow capture
- 5 cfs max. diversion rate
- ~97 acre-feet of water pumped through annually
- Removal of ~27 lbs. of zinc per year and 33 lbs. of suspended solids
- Storage capacity: 1.8 acre-feet wetland and 2.3 acre-feet reservoir
- ~70% of park irrigated with recycled water
- Habitat for native fish
- Native and drought tolerant plants

Urban Orchard Project

Conceptual Site Plan

Site Amenities



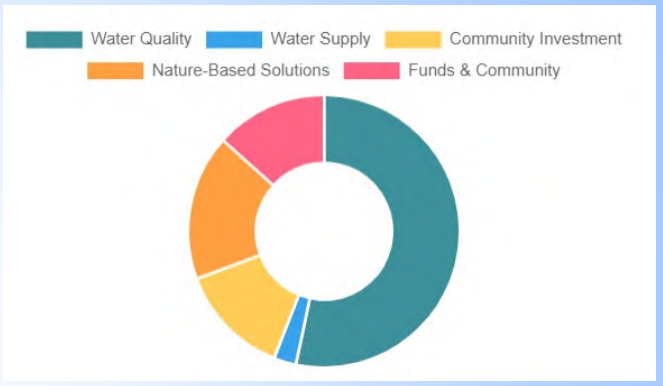
Project Benefits:

- 322 trees, GHG reduction: 535 MT CO_2e over 40 yrs.
- Education garden and 196-tree orchard
- Tongva-inspired playground
- Outdoor fitness equipment
- Knoll overlook area
- Habitat viewing stations
- 0.5 miles of multi-use paths
- Artwork and interpretive signage throughout
- Community/education center
- Partnership with Conservation Corps of Long Beach to provide training, programming, and park maintenance
- Restrooms and security features

Urban Orchard Project

Summary: Project Scoring Estimate

- Module-generated score of 75



Community Engagement Summary:

The project has been designed through an extensive community outreach process that started in 2017.

- 39 community meetings, focus groups, and tabling events
- 986 community members were engaged

Funding Requested:

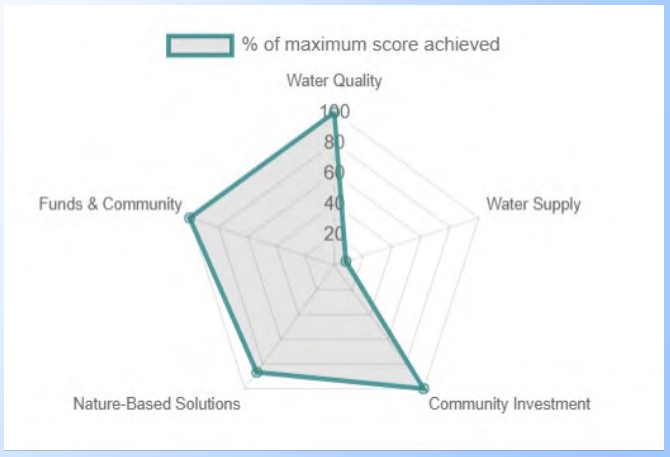
$ 5,438,000

Breakdown: Year 1: $2.2M; Year 2: $2.2M; Year 3: $346K; Year 4: $346K; Year 5: $346K

Labor Force:

Permanent maintenance staff: 2 City of South Gate staff, 3-4 CCLB

Rotating crew: 10-12 Corpsmembers participating in training programs



FACT SHEET

THE VALLEY PLAZA PARK STORMWATER CAPTURE PROJECT

The Valley Plaza Park Stormwater Capture Project is a proposed regional project led by the Los Angeles Department of Water and Power in collaboration with the Los Angeles Department of Public Works Bureau of Engineering, Bureau of Sanitation, and the Los Angeles Department of Recreation and Parks. This Project is part of the Stormwater Capture Parks Program, which will capture and infiltrate stormwater throughout various parks within the northeastern region of the San Fernando Valley. The goal of this project is to improve the City of Los Angeles' water quality and water supply by pre-treatment and infiltration of stormwater while also providing community enhancements and flood mitigation for the park and the disadvantaged community.

97 POINTS

COUNTY SCORE

Safe Clean Water (SCW) Program

WET WEATHER WATER QUALITY BENEFITS

50/50

52.8 AF Capacity

93 % Zinc Removal

80 % E. coli Removal

SIGNIFICANT WATER SUPPLY BENEFITS

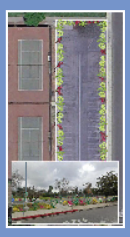
12/25

590 AF/YR Captured

NATURE BASED SOLUTIONS

15/15

Removes **100%** of impermeable area, adds native vegetation including **~200** Trees and Native Plants



COMMUNITY BENEFITS

10/10

- ✓ Flood Management
- ✓ Park Enhancements
- ✓ New Recreational Opportunities
- ✓ Greening of School
- ✓ Increased Trees and Shade
- ✓ Carbon Reduction
- ✓ Improved Waterway Access

LEVERAGING FUNDS AND COMMUNITY SUPPORT

10/10

50 % LADWP Funding

50 % SCW Funding

Total Project Est = $53M

Community Support

Council for Watershed Health

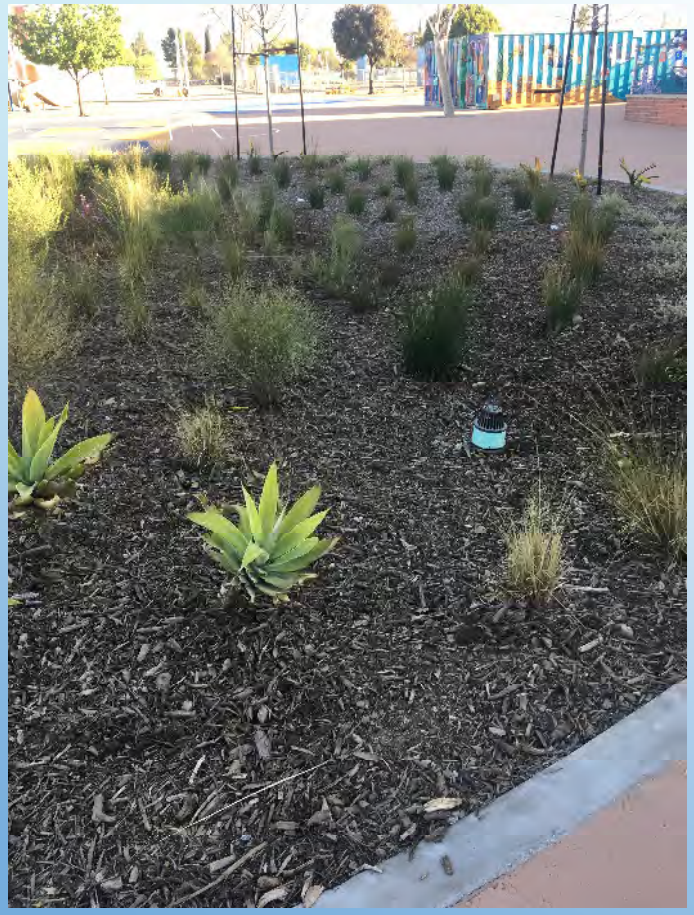
Pacoima Beautiful

Mountains Recreation & Conservation Authority

PAUL KREKORIAN
LOS ANGELES CITY COUNCILMEMBER

PROJECT OVERVIEW

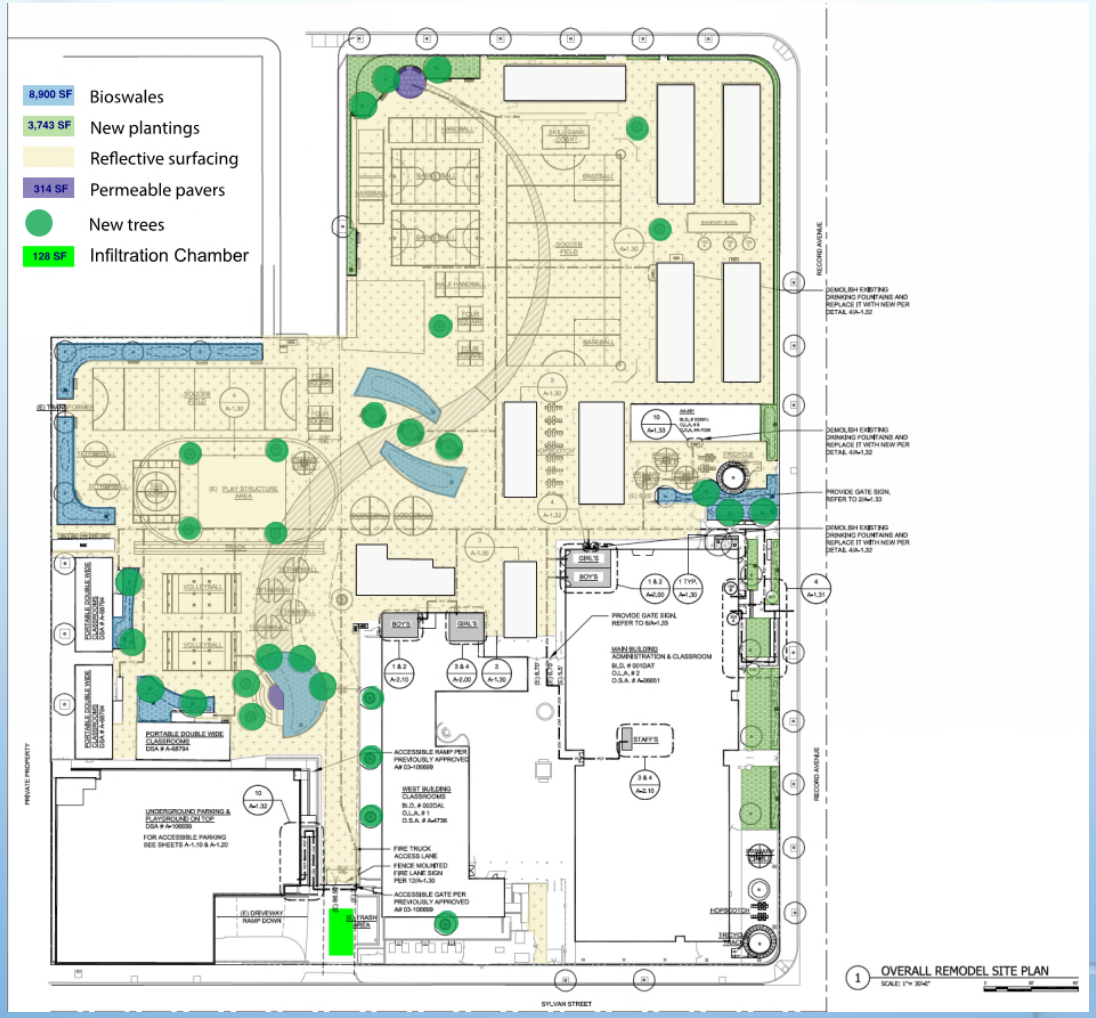
SUMMARY OF VICTORY ELEMENTARY SCHOOL DROPS PROJECT

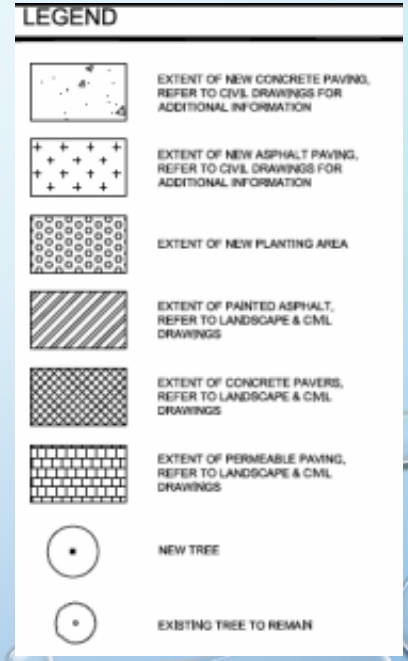


- THE SCOPE OF WORK PROVIDES RUNOFF AND POLLUTANT REDUCTION THROUGH BIOINFILTRATION AT PROJECT BIOSWALES. DROUGHT TOLERANT NATIVE LANDSCAPING IS ALSO INSTALLED IN SWALE AREAS AS WELL NONSWALES AREAS TO PROVIDE SHADE. RUN-OFF IS ALSO REDUCED THROUGH PERMEABLE PAVERS AND UNDERGROUND INFILTRATION CHAMBER UNIT.

- *NOTE: THIS DROPS PROJECT WAS INSTALLED IN CONJUNCTION WITH THE PAVING PROJECT WHICH INCLUDES UPGRADES TO THE DRINKING FOUNTAINS AND UPGRADES TO MEET THE ACCESSIBILITY REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT (ADA) INCLUDING PATH OF TRAVEL.THE PROJECT WAS INSTALLED IN CONJUCTION WITH THE PAVING PROJECT.

PROJECT OVERVIEW





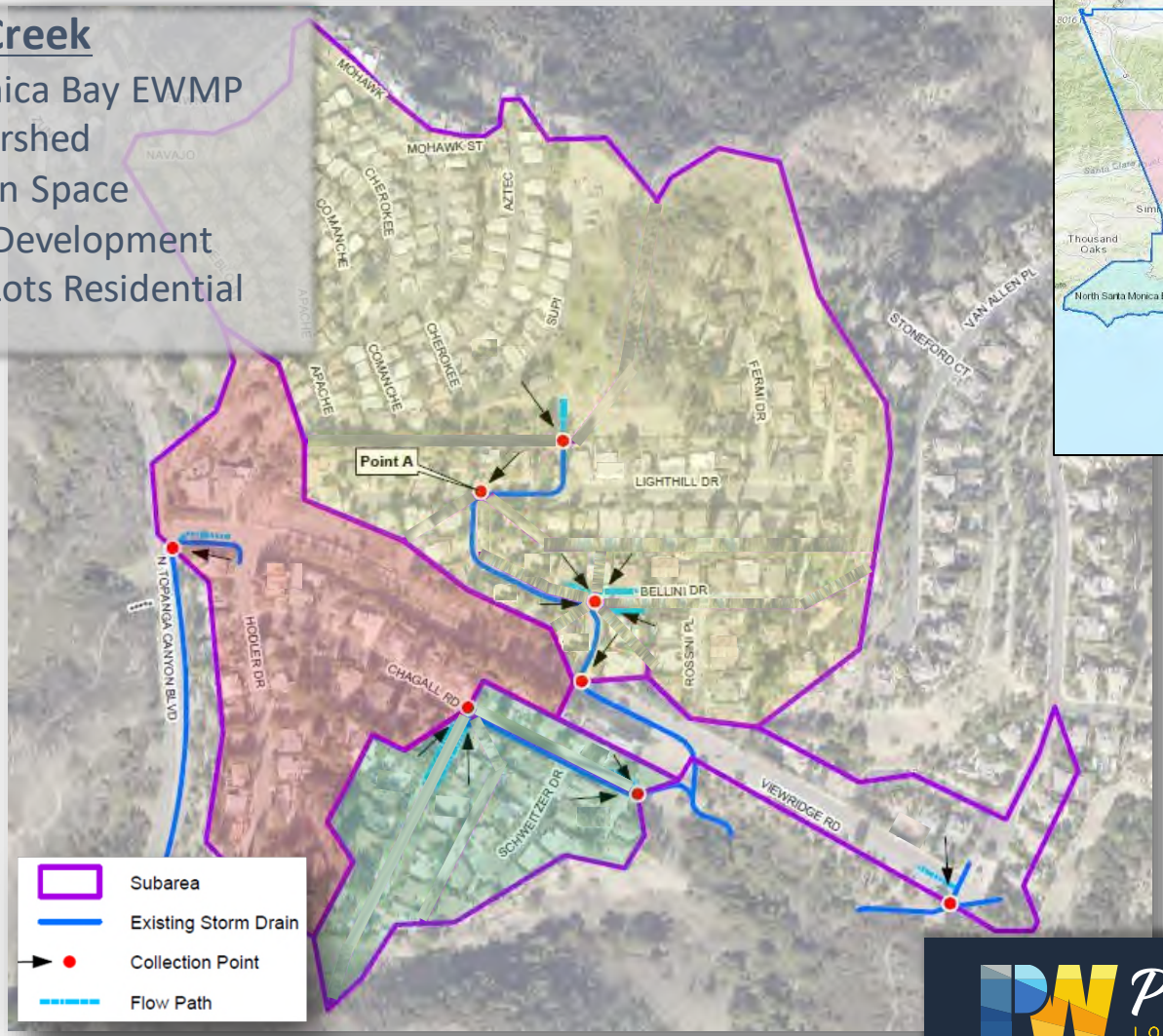
MODULE OVERVIEW

Scoring Section	My Score	Max Points	Scoring Criteria	Module Section (Click to be Directed to Section)	Ideas to Improve Score
Water Quality Wet + Dry Weather Part 1	20	20	Effectiveness(Cost Effectiveness) = (24-hour BMP Capacity) / (Construction Cost in $Millions) • <0.4 (acre feet capacity / $-Million) = 0 points • 0.4-0.6 (acre feet capacity / $-Million) = 7 points • 0.6-0.8 (acre feet capacity / $-Million) = 11 points • 0.8-1.0 (acre feet capacity / $-Million) = 14 points • >1.0 (acre feet capacity / $-Million) = 20 points	24-hour Storm Capacity Cost & Schedule	
Water Quality Wet + Dry Weather Part 2	30	30	Primary Class of Pollutants • >50% = 15 points • >80%= 20 points (20 Points Max) Second or More Classes of Pollutant • >50% = 5 points • >80%= 10 points (10 Points Max)	Long-term Performance	
Water Supply Part 1	N/A	13	• >$2500/ac-ft = 0 points • $2,000–2,500/ac-ft = 3 points • $1500-2,000/ac-ft = 6 points • $1000–1500/ac-ft = 10 points • <$1000/ac-ft = 13 points	Cost & Schedule Benefit Magnitude Cost Effectiveness	
Water Supply Part 2	0	12	• <25 ac-ft/year = 0 points • 25 - 100 ac-ft/year = 2 points • 100 - 200 ac-ft/year = 5 points • 200 - 300 ac-ft/year = 9 points • >300 ac-ft/year = 12 points	Benefit Magnitude	
Community Investment	10	10	• One of the Community Investment Benefits = 2 points • Three distinct Community Investment Benefits = 5 points • Six distinct Community Investment Benefit = 10 points	Community Investment Benefits	
Nature-Based Solutions	15	15	• Implements natural processes or mimics natural processes to slow, detain, capture, and absorb/infiltrate water in a manner that protects, enhances and/or restores habitat, green space and/or usable open space = 5 points • Utilizes natural materials such as soils and vegetation with a preference for native vegetation = 5 points • Removes Impermeable Area from Project (1 point per 20% paved area removed) = 5 points	Nature-Based Solutions	
Leveraging Funds Part 1	0	6	• >25% Funding Matched = 3 points • >50% Funding Matched = 6 points	Cost Share	
Leveraging Funds Part 2	N/A	4	The Project demonstrates strong local, community-based support and/or has been developed as part of a partnership with local NGOs/CBOs.	Local Support	
Totals	75	110			

Viewridge Road Stormwater Improvements Project

Topanga Canyon Creek

- North Santa Monica Bay EWMP
- Largest Sub-watershed
- 88% Natural Open Space
- 11% Residential Development
- Rural and Small Lots Residential Subdivision



Public Works
LOS ANGELES COUNTY

Viewridge Road Stormwater Improvements Project

Project Area

- 80 Acre Tributary
- 3.93 AF Treatment Volume
- Capacity to treat up to 33 AFY of Stormwater Runoff

Benefits

Improved Water Quality

- Protect beneficial uses of the Topanga Canyon Creek and Santa Monica Bay habitat
- Reduction of target pollutants (Bacteria, Toxics, Sediment, Nutrients, Trash)

Improved Water Quality

- Improves flood risk mitigation
- Creates habitat
- Reduce heat island effect
- Increase number of trees/vegetation

Public Works
LOS ANGELES COUNTY

Viewridge Road Stormwater Improvements Project

Community Outreach

- Outreach conducted to date
  - December 12, 2019
    - Topanga Canyon Library
  - February 20, 2020
    - Topanga Canyon Library
  - April 14, 2020
    - Virtual Community Meeting

Outreach Plan

- Information sessions (in-person or virtual, as needed)
- Hosted websites with information on the following
  - Documents
  - Informational graphics
  - Contact information
- Mailers and/or social media ads

Public Works
LOS ANGELES COUNTY

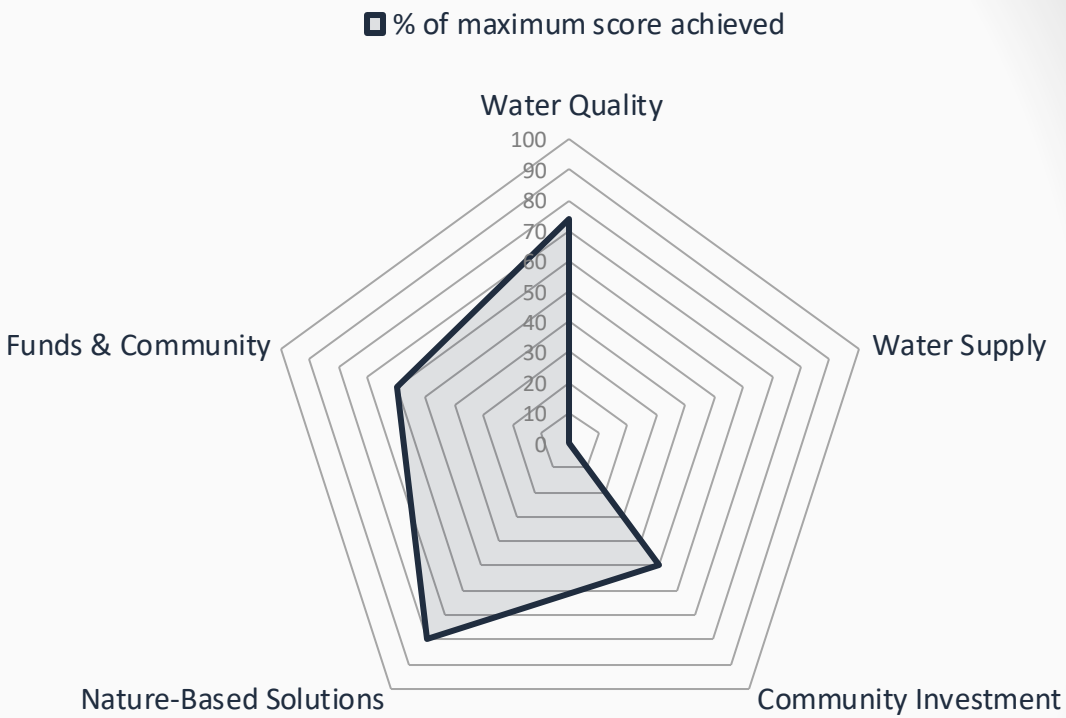
Viewridge Road Stormwater Improvements Project

Estimated Project Scoring

- Water Quality – 37 points
- Community Investments – 5 points
  - Improves flood management, flood risk mitigation
  - Creates habitat
  - Reduce heat island effect
  - Increase number of trees
- Nature Based Solutions – 12 points
  - Implements natural processes
  - Utilizes natural materials
  - 42% paved area removed
- Leveraging Funds – 6 points

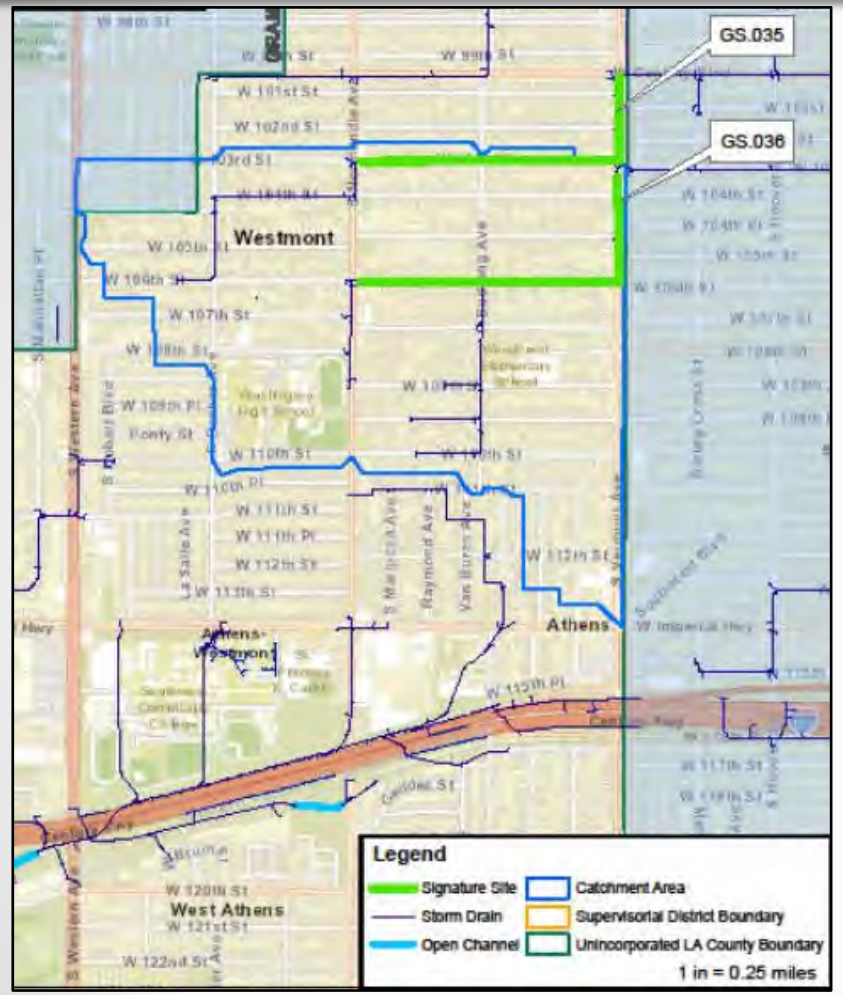
Total Score

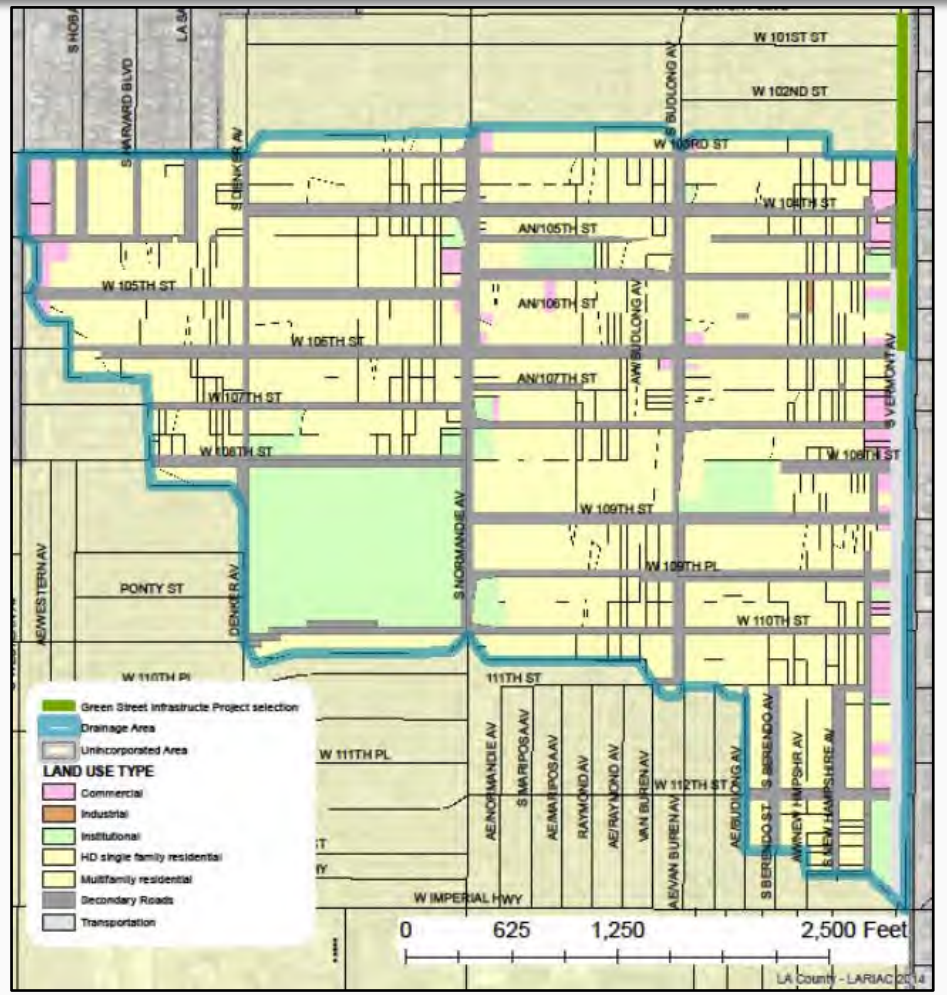
- 60 points

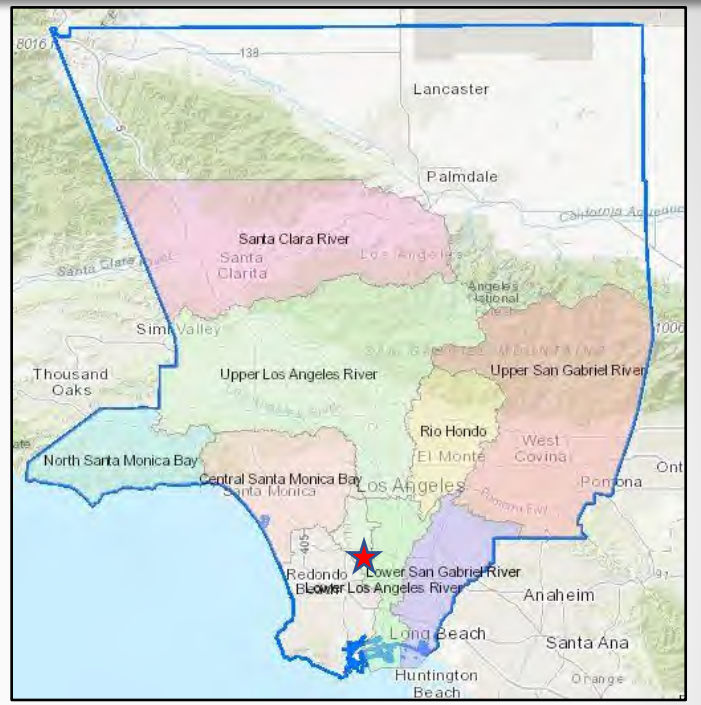


Public Works
LOS ANGELES COUNTY

Westmont – Vermont Avenue Green Improvement Project Location







Project Location

- Upper Los Angeles River
- Unincorporated Community of Westmont
- Vermont Avenue between Century Blvd and 106th Street
- Drainage Area = 353 acres
- Mostly residential
- Within DAC

Westmont – Vermont Avenue Green Improvement Project Design Elements/Benefits

Project Design Elements

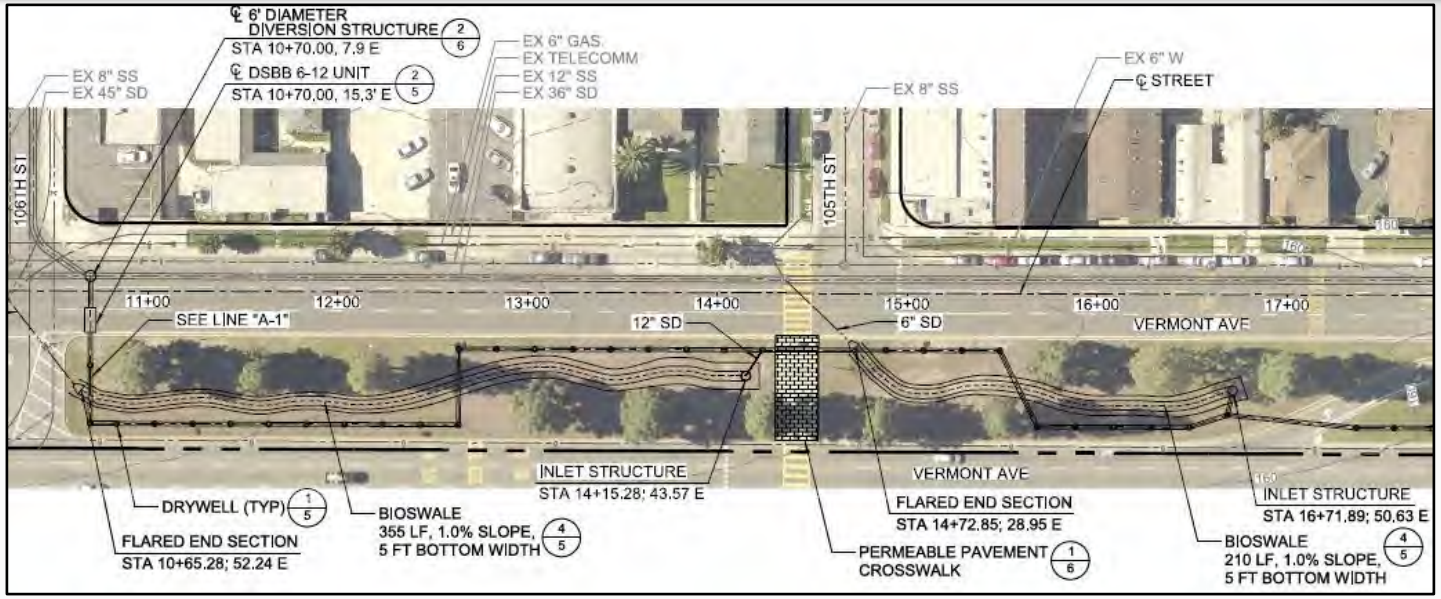
- 2 Diversion Points
- Pretreatment Devices: Debris Separating Baffle Boxes
- 83 Drywells for infiltration
- 4,000 square feet of bioswales
- 2,400 square feet of pervious pavement

24-hour BMP Capacity > 16 acre-feet

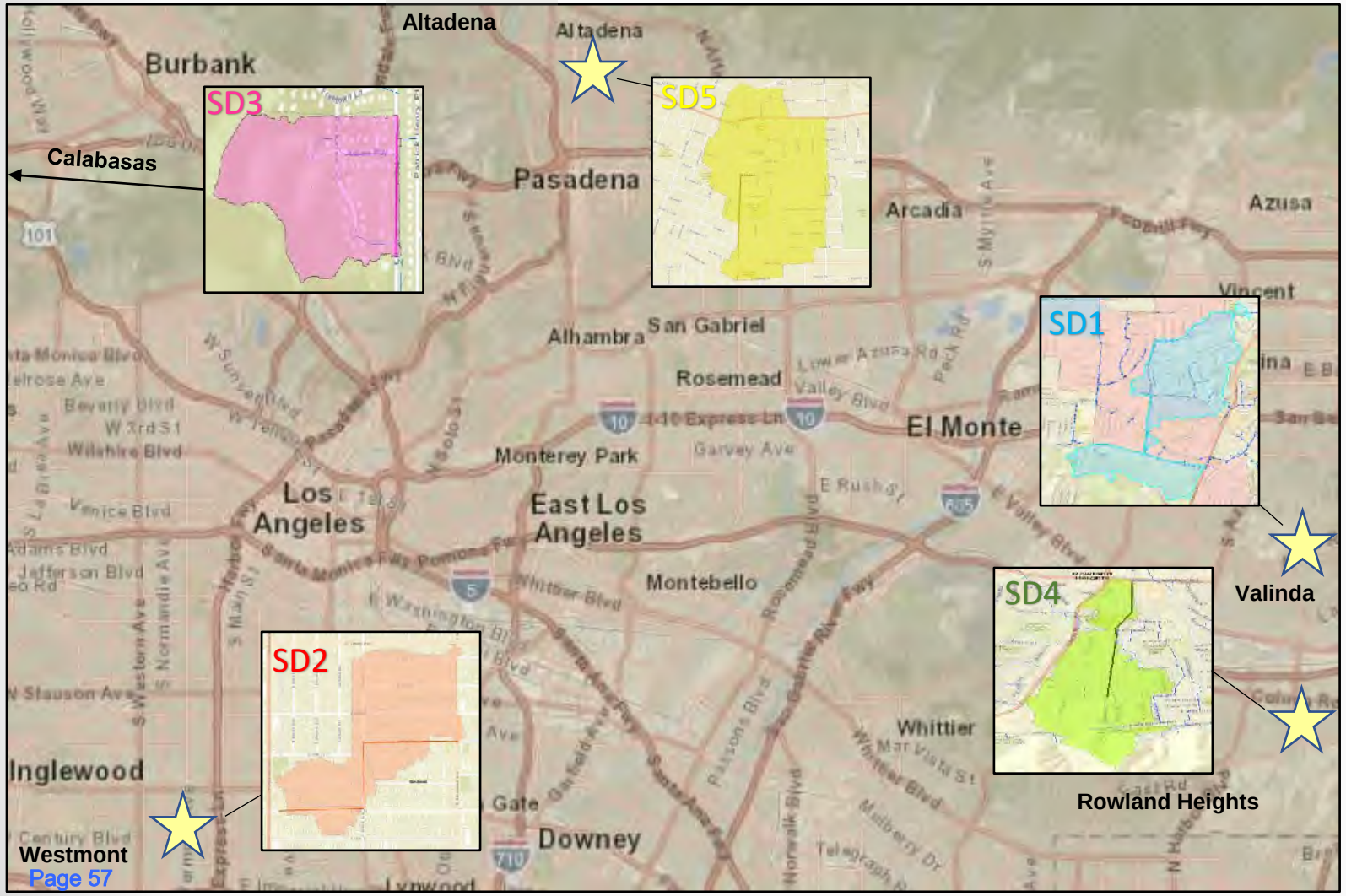
Project Benefits

- **Water Quality**: removing pollutants from stormwater before entering Arroyo Seco and Los Angeles River
  - Primary Pollutant: Total Zinc = 67% reduction
  - Secondary Pollutant: Trash = 100% reduction

- **Community Enhancement:**
  - Improve localized flooding
  - Increase vegetation and create new habitat
  - Reduce heat island effect and increase shade
  - Enhance traffic safety



Westmont – Vermont Avenue Green Improvement Project Outreach



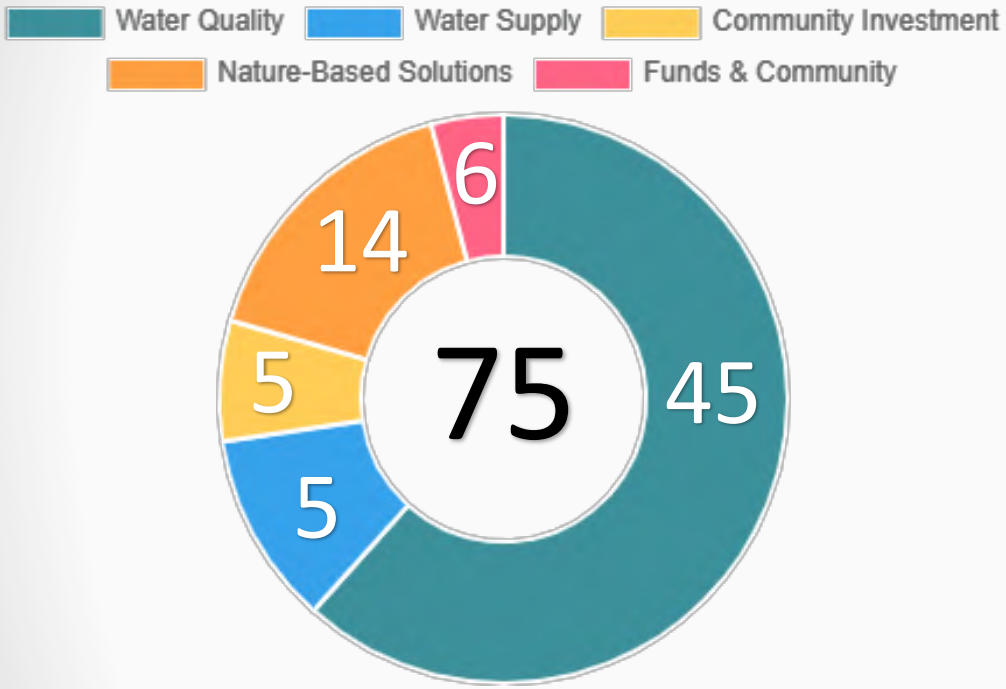
Green Street Master Plan

- Objective: to identify the most strategic and cost-effective locations for green street projects
- Circulated potential green street sites to the Green Infrastructure Feasibility Team, consisting of numerous divisions within Los Angeles County Public Works and Los Angeles County Parks and Recreation
- Several sights selected for each Supervisorial District based on the needs of all stakeholders
- Met with Supervisorial District 2 to identify areas in need of improvement and enhancement
- Green street site along Vermont Avenue in the unincorporated community of Westmont selected as signature green street project.

Future Public Outreach

- **Community Meetings** will be held during the design phase of the project to receive feedback from the residents to incorporate in final plans
- **COVID Implications:** due to the recent pandemic, community meetings will be held virtually unless State orders change.

Westmont – Vermont Avenue Green Improvement Project Scoring



Scoring Section	Score	Score Calculation
Water Quality Wet + Dry Weather Part 1	20	16.4 AF/$11.1M = 1.5 AF capacity/$-M > 1.0 AF/$-Million = 20 pts
Water Quality Wet + Dry Weather Part 2	25	Primary Pollutant (Zinc) = 63% > 50% = 15 pts Secondary Pollutant (Trash) = 100% > 80% = 10 pts
Water Supply Part 1	N/A	
Water Supply Part 2	5	197 AF/year = 5 pts
Community Investment (CI)	5	Project improves flood management (1), creates new habitat and wetlands (2), and reduces heat local island effect (3). 3 CI Benefits = 5 pts
Nature-Based Solutions	14	Project implements natural processes (5 pts), utilizes natural materials (5 pts), and removes 90% of impermeable area (4 pts).
Leveraging Funds Part 1	6	>50% Funding Matched = 6 pts
Leveraging Funds Part 2	N/A	
Totals	75	

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services and activities

Wilmington Neighborhood Greening Project

FACT SHEET

The Wilmington Neighborhood Greening Project will improve local water quality, provide a sustainable local water supply to irrigate the Wilmington Recreation Center, and will result in community benefits through park improvements and landscaping enhancements adjacent the recreation center. Community and recreational enhancements include refurbishing the baseball fields, adding new batting cages, upgrading field lights to extend the hours of play, and constructing new horseshoe pits. Bioswales with natural plantings and trees will be installed on streets adjacent to the recreation center, which will provide for a greener and walkable neighborhood near the park, benefitting local residents and park users.

Parkway Bioswales

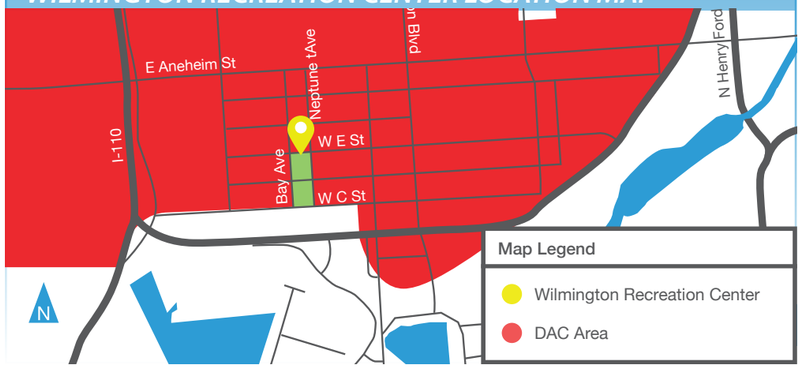
Permeable Parking

Street Trees

Call our 24 hour Customer Care Center at 1-800-773-2489 | **lacitysan.org/safecleanwater**

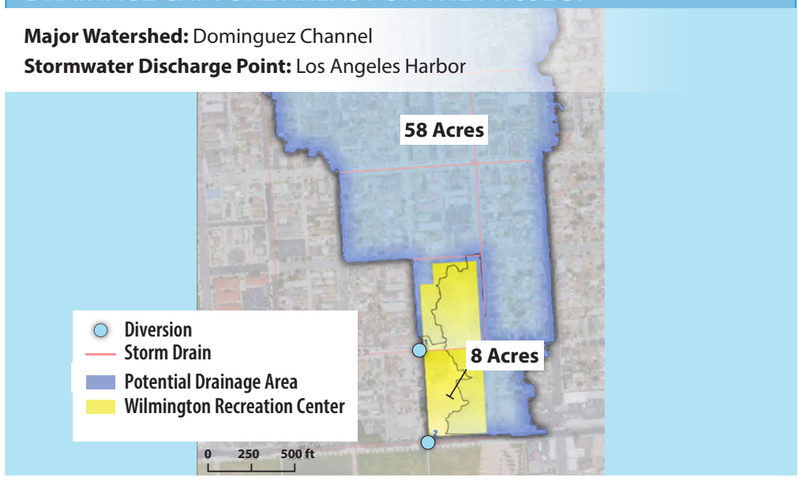
Wilmington Neighborhood Greening Project

WILMINGTON RECREATION CENTER LOCATION MAP

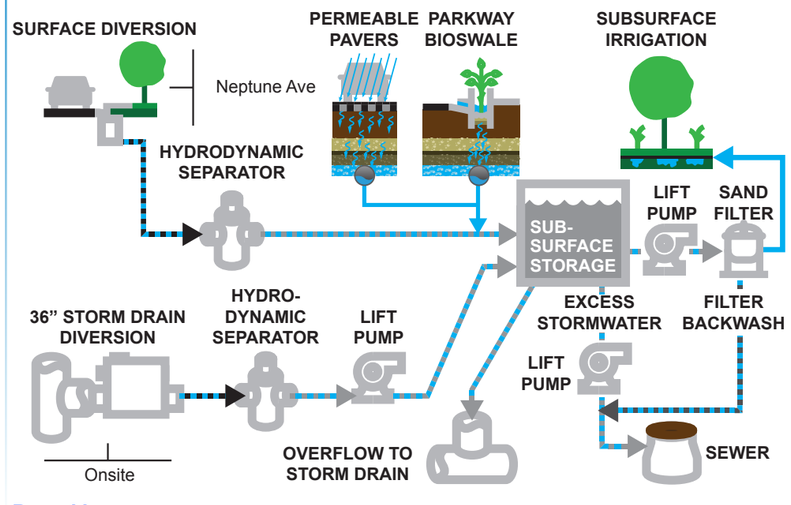


DRAINAGE CAPTURE AREAS FOR THE PROJECT

Major Watershed: Dominguez Channel
Stormwater Discharge Point: Los Angeles Harbor



PROCESS FLOW DIAGRAM



LOCATION

Wilmington Recreation Center
325 N Neptune Ave.
Wilmington, CA 90744
City of Los Angeles, Department of Recreation and Parks
Neighborhood Council:
93–Wilmington Neighborhood Council

Council District: 15 (Joe Buscaino)
Supervisorial District: 4 (Janice Hahn)
Assembly District: 64 (Mike Gipson)
State Senate District: 35 (Steven Bradford)
Congressional District: 44
(Nanette Barragan)

DAC BENEFITS

The vast majority of the City of Los Angeles community of Wilmington is designated as a DAC, including the location of the proposed Wilmington Neighborhood Greening Project.

The local community will benefit from the enhanced recreation spaces and new park amenities at the Wilmington Recreation Center as well as neighborhood greening through the installation of bioswales with natural plantings and trees on streets adjacent to the recreation center.

In addition to providing for a greener, more livable and walkable neighborhood near the park, the bioswales contribute to enhanced water quality through the use of plants and soils that infiltrate and treat stormwater runoff, reducing pollutants and contaminants.

The new stormwater collection and treatment system that will be installed under the ball fields at the park, will provide additional water quality benefits by significantly reducing stormwater pollutants in the local neighborhood that currently flow into the West Basin of San Pedro Bay.

SCOPE

- 2 Upgraded baseball fields
- Upgraded field lights
- New batting cages
- Upgraded horseshoe pits
- 16 new street trees
- 2,931 SF of parkway bioswales
- 157,768 SF Subsurface irrigation
- Replace 2,048 SF impermeable parking lot with permeable pavers
- Educational dislplays
- Stormwater quality and reuse features (see BMP TRAIN below)

BMP TRAIN

1. 5.94 cfs of stormwater will be captured from a 66 acre storm drain diversion and an 8 acre surface diversion.
2. The water from the diversions will be cleaned by two hydrodynamic separators.
3. Stormwater will also be filtered through 2,048 SF of permeable pavement and 2,931 SF of bioswales.
4. The cleaned water will be stored in a 10.16 AF underground detention tank.
5. The stored water will be used for the onsite irrigation of 9.6 AF/yr.
6. 12.3 AF/yr of excess stormwater will be sent to the Terminal Island Water Reclamation Plant for recycling.

PRELIMINARY PROJECT SCHEDULE | TOTAL DURATION: 57 MONTHS

Task Name	YR1-FY21/22				YR2-FY22/23				YR3-FY23/24				YR4-FY24/25				YR4-FY25/26			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Planning																				
Monitoring																				
Design																				
Permitting																				
Procurement																				
Construction																				
Optimization																				
Outreach																				

ANTICIPATED SAFE CLEAN WATER PROGRAM SCORE

Category	Score	Justification
Wet Weather Water Quality Benefits (50 points max)		
Water Quality Cost Effectiveness	20	1.001 AF/$ million
Water Quality Benefit	30	80.3% bacteria and 100% trash
Water Supply Benefits (25 points max)		
Water Supply Cost Effectiveness	0	$33,266 /AF
Water Supply Benefit Magnitude	2	The yearly wet weather volume = 21.88 AF The yearly dry weather volume = 32 AF Total = 53.88 AF
Community Investment Benefits (10 points max)		
Improved Flood Management	5	Reduce the flow through the existing storm drain system during storm events
Enhancement of Parks or Habitat		Restore and enhance the park fields, add 2,931 SF of parkway bioswales and 16 street trees
Enhance Recreational Opportunities		2 upgraded baseball fields, new batting cages, upgraded field lights and horseshoe pits, and new interactive educational features
Reduced Heat Island Effect		New trees in conjunction with the bioswale features will provide additional shade and reduce heat island
Increased Trees and Vegetation		16 street trees and 2,931 SF of new landscaping
Nature Based Solutions (15 points max)		
Natural Processes	5	The parkway bioswales will capture and filter stormwater. The trees and other landscaping will improve air quality through the natural processes of plant respiration and photosynthesis
Natural Materials	5	The project uses California friendly vegetation and soils in the landscaping and park features
Removal of Impervious Materials	1	20% of impermeable area removed
Leveraging Funds and Community Support (10 points max)		
Cost Share	0	The total project cost is requested
Local Support	4	"Members of the project team met with stakeholders on May 14, 2020, July 15, 2020, August 6, 2020, and August 19, 2020
Total Score	**72**	

SCHEDULE BASED CASH FLOW | TOTAL COST: $12.2 MILLION

Task Name	YR1-FY21/22	YR2-FY22/23	YR3-FY23/24	YR4-FY24/25	YR4-FY25/26	Total
Planning	$90,000					**$90,000**
Monitoring	$111,727	$43,900	$37,700	$37,700	$37,700	**$268,727**
Design & CM	$461,000	$460,773	$250,000	$250,000	$250,000	**$1,671,773**
Construction			$3,100,00	$4,531,00	$2,521,500	**$10,152,500**
Total	**$662,727**	**$504,673**	**$3,387,700**	**$4,818,700**	**$2,809,200**	**$12,183,000**

$218,481 per yr operations and maintenance cost

Zamora Park Renovation Project Summary

The Zamora Park Renovation Project proposes to significantly enhance Zamora Park, a 4.48-acre public park located in the densely populated City of El Monte. This Renovation Project incorporates years of community input, with plans to create new amenities based on community-desired features.

New features

The Project will include recreational and aesthetic amenities, such as walking trails, native and drought tolerant landscaping, bio-swales, subterranean infiltration basins, educational signage, and the following:

- New playgrounds for ages 2-5 and 5-12
- New basketball courts (one half court and one full court)
- Open field for youth sports and passive recreation
- Splash pad
- Outdoor fitness equipment
- Walking and jogging paths
- Picnic areas with barbecue grills
- Amphitheater
- Plaza
- Teen zone
- Community art
- LID elements
- Water conservation elements
- Lighting and security cameras

DAC Benefits

Renovating Zamora Park will provide many socially vulnerable residents with a first-class open space to recreate, gather, and connect with other community members. Additionally, the Project will provide various air quality benefits for the DAC. The Project will add over 112 new trees and large planting areas of shrubs, which will filter toxic air contaminants and pollutants and create a healthier space for residents in and around the Park. Renovation of the Project will also increase community safety for the neighborhood by adding new features selected by the community, such as additional lighting and security cameras creating a safer and more inviting environment for the DAC while driving out illicit activities that currently occur in the dilapidated existing amenities. The Zamora Park Renovation Project will create a usable, safe, and engaging park space that invites the community by renovating an existing deteriorating park.

Water Quality

The park renovation will improve water quality and habitat in the local area as well as in the nearby San Gabriel River by infiltrating stormwater runoff at the park and from a portion of the streets bordering the park. This will aid the City in achieving MS4 Permit compliance and San Gabriel River Watershed TMDL compliance. Effectiveness Monitoring will be conducted, and metrics tracked to determine water quality improvement.

Water Supply/Water Conservation

The Project is located above the aquifer of the Main San Gabriel River Basin and should provide some groundwater recharge.

The Project will add about 60,000 square feet of native/drought tolerant shrubs and groundcover planting beds throughout the park as well as permeable pavers at a plaza. Approximately 112 new trees (minimum) will also provide canopy cover during storms and shade during summer months. Passive stormwater infiltration will be achieved through bioswales and subterranean infiltration basins.

The Project will install a water-efficient irrigation system that utilizes rain sensors, soil moisture meters, and tree bubblers. Drip line irrigation will be installed where possible to reduce evapotranspiration while the system is in use. Landscaped areas are expected to be established after three years' time at which point the City could discontinue watering in those landscape zones.

Nature-Based Solutions and benefits

Drought efficient landscaping, pervious walkways and surfaces, bioswales, and subterranean infiltration basins will mimic natural processes to slow, capture, and infiltrate stormwater and also enhance and restore the park's green space and usable open space. Renovation will include invasive plant removal and native plant propagation. All proposed plant material and trees will be drought tolerant, non-invasive, and/or native, and will be selected and sited to minimize the need for and use of toxic pesticides and inorganic fertilizers. The Project will remove and replace approximately 1.4 acres of turf with native plants that require little to no irrigation once established and provide habitat for insects, birds, and other small animals. The Project will plant approximately 112 new trees, resulting in a more than 300% increase to the existing tree canopy and a reduction in heat island effects.

Community Investment Benefits/Recreation

Other nature-based solutions and benefits at the park will include a looped DG walking path, nearly a mile long, that will wind around the park's perimeter, passing through areas of native plantings and fitness equipment areas, with smaller paths leading into the heart of the park. This will be a natural route for joggers and walkers. The residents of the adjacent senior housing complex in particular have expressed the desire for walking paths and nature trails in the park to promote exercise. Much of the existing park is currently comprised of turf areas. These are used for informal or youth pick-up sports games. This has been an important use that the community would like to see remain after the renovation. A new great lawn with drought tolerant turf and a subterranean infiltration basin will be created so the park can continue to provide unprogrammed space for informal sports, games, and passive recreation for youth, seniors, and families.

Outreach/Engagement /Local Support

The City and The Trust for Public Land (TPL) have conducted extensive community engagement including at least eleven meetings and workshops related to the park renovation and will continue to meet with neighborhood residents and stakeholder groups throughout the renovation process. TPL and City staff regularly work with Best Start to present the results of community design workshops or provide Project updates to the community. TPL will continue to host community activities at the Park such as the community mosaic workshop, to create artwork that will be installed in the Park when the renovation is completed. TPL and City staff will continue to work with the Best Start network and other local organizations to sustain meaningful relationships with residents and partners, building on and uniting Park stewards in the community. Community Engagement meetings for this Project started in January

2017, with four meetings that year. Three meetings/workshops were held in 2018. Four more meetings/workshops were held in 2019. At least one additional workshop is planned to create artwork for the Park. Pre-construction and during construction meetings are also planned but not scheduled at this time.

The scoring for this Project at application was **78**. The Project scores well for Water Quality (50) but is too small to provide much Water Supply Benefit (0). The Project scores fair for Community Investment (5) and well for Nature-Based Solutions (13) and Leveraged Funds (10).